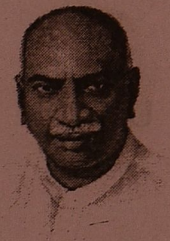




MADURAI KAMARAJ UNIVERSITY
(University with Potential for Excellence)
DISTANCE EDUCATION



ACL - MKU

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M.Com.

Financial Management (MA6)

Second year Group-'A'

Volume-I

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SYLLABUS

- Unit I : Financial Management - Nature, Objectives and functions - Scope of financial management - Importance of time value of , money in financial decisions - sources of finance.
- Unit II : Financial Statement Analysis and Ratio Analysis -Income and Position Statement - Meaning and Objectives of Ratio Analysis - Types of Ratio -Uses and Limitations.
- Unit III : Fund Flow and Cash Flow Analysis
- Unit IV : Marginal Costing - Cost Volume Profit Analysis -Break even Analysis. Multi-product Situation -Differential Cost in Alternative Choice Decision.
- Unit V : Budgeting and Budgeting Control - Classification of Budget -Sales Budget - Production Budget - Selling and Distribution Cost Budget - Labour Budget-Plant Utilisation Budget - Production Overhead Budget -Cash Budget -Master Budget - Flexible Budget and Zero - base Budget, Budgetary Control- Definition-Objectives -Essentials.
- Unit VI : Financial Decisions - Cost of Capital - Meaning and Measurement - Capital Budgeting Techniques - Techniques of Appraisal of Investment Proposal
- Unit VII : Working Capital Management-Concept of Working Capital - Deployment of Working Capital -Source of Working Capital - Analysis of working Capital - Cash, Receivable and Inventory Management. Working Capital Forecasting -Credit Management.
- Unit VIII : Capital Structure -Introduction -Capital Structure Theories - Assumptions - Definition of Net Income Approach - Net Operating Income Approach - Modigliani - Miller Approach - Traditional Approach.
- Unit IX : Operating, Financial and Combined Leverage.; Operating Leverage -Financial Leverage EBIT- EPS Analysis -Indifference Point - Combined Leverage.
- Unit X : Dividend Policy - Introduction -Determinants of Dividend Policy - Dividend Pay Out Ratio -Stability of Dividend -Legal, Contractual and Internal Constraints and Restrictions - Irrelevance of Dividend - MM Hypothesis - Assumptions -Relevance of Dividends - Walter's Model, Gordon's Model.

CONTENTS

UNIT NO.		PAGE NO.
	VOLUME-I	
	INTRODUCTION	
1	FINANCIAL MANAGEMENT	1-30
2	ANA LYSIS OF STATEMENT& ACCOUNTING RATIOS	31-146
3	FUNTS FLOW & CASH FLOW ANALYSIS	147-221
4	MARGINAL COSTING	222-281

INTRODUCTION

In the present situation of company form of organisation, the capital and finance have increased the significance of Financial Management for Management and control purposes. The study of this subject provides knowledge to the students of Commerce an opportunity to draw upon an experience to apply various business concepts and analytical tools to complex problems and issues in any organisational settings.

This study material is prepared in the SIM (Self Instruction Material) format in order to introduce the subject with clarity to enable the students to understand the contents without much difficulty.

This study material provides the basic concepts, theories and techniques relating to Financial Management with adequate illustrations and aims to develop the student's ability in understanding the different concepts and their application.

The study material covering the whole syllabus is divided into two volumes. Volume I relates the Management Accounting aspects relating to Financial Management such as Fundsflow and Cashflow analysis, Ratio analysis and Marginal Costing.

Volume II covers the remaining aspects relating to capital such as cost of capital, capital budgeting, budgeting and budgetary control, Capital Structure and Dividend Policy. A number of illustrations and self examination questions are given in each unit of this material to help the students to have a better grasp of the subject.

UNIT 1 FINANCIAL MANAGEMENT

Structure

Notes

- 1.0 Introduction
- 1.1 Unit objectives
- 1.2 Stages Financial Management
- 1.3 Financial Management – Concept
- 1.4 Objectives of Financial Management
- 1.5 Functions of Financial Management
- 1.6 Scope of Financial Management
- 1.7 Sources of Finance
- 1.8 Key Terms
- 1.9 Summary
- 1.10 Answers to Check your progress
- 1.11 Questions / Exercises
- 1.12 Further Reading

1.0 INTRODUCTION

Imagine a scenario where you and your friends decide to set up and manage a small company by the name of Calcutronics Ventures to manufacture and manage your new brand of calculators. Being not only the managers of your company, you are also the owners of the company i.e. the major shareholders. Before of your start with business you will have to make certain financial decisions. You will have to decide which assess to buy like premises and machinery. These assets will cost money and the total cost of acquiring them would be your initial investment in the business. Now, a very vital question which arises to your mind is how this investment is to be financed i.e. where do you get the money from to invest in your business? Other questions which need to be answered would be do you have to put your own money only or there are other means of raising money? What is the best way to finance the investment? Who will provide the finance? And how much will it cost to raise the finance?

Besides needing the capital to acquire fixed assets like premises and machinery, the business will need capital to run it on day to any basis as

well. This capital is known as the working capital, which is needed to purchase the raw materials, pay suppliers, wages, expenses, etc. this leads to another concern regarding how best to finance its day to day operations? The objective will be to ensure that there is always enough cash available to meet company's operating expenses and that business activities do not suffer due to **shortage of cash. Here the focus is on making investment and financing decisions that affect the company in the short term.**

1.1 UNIT OBJECTIVES

- Understand the meaning and importance of business finance
- Explain meaning and objectives of financial management.
- Describe scope of financial management
- Understand the dilemma of finance manager to maintain a balance between liquidity and profitability
- Describe the different methods of financial management
- Understand the relationship between financial management and other areas of management
- Describe the organization of finance function
- Explain the importance of financial management: and
- Explain the meaning of certain key terms.

1.2 STAGES OF FINANCIAL MANAGEMENT

First Stage:

Financial Recording

In the yesteryears, the role of the accountant was merely to record the transactions as and when they took place, and summarize the record and present periodically (usually at the end of the accounting year) the financial picture of the concern in the form of Profit and Loss Account and Balance Sheet.

It was only in the later part of the 19th century that industries were coming up fast, and that the need for drastic improvements in methods of accounting was felt. It may be noted that the original Companies Acts which were passed in England and in India in the year 1844 and 1850 respectively,

contained various clauses on the aspect of maintenance of accounts of the companies.

Accountants now started believing in systematic recording of financial transactions so as to reveal the following facts:

1. Correct profit or loss incurred in a particular period.
2. The monetary details of the assets and liabilities of the business as on a particular date.

Second Stage:

Scientific ascertainment of Cost

The systematic recording of the financial transactions too was of little use from the management angle. The accountant acted like the punching card machine, recording the transactions without having any feeling about what he has recorded. If the Profit and Loss Account showed a decent profit and the Balance Sheet reflected a comfortable solvency, everybody would, of course, be happy and the reverse would be the case if the results did not look nice. The accountant's job would be over, if he had presented an accurate picture promptly. In short, the accounts were prepared from the viewpoint of arithmetical accuracy.

With the advent of the factory system of production, matters became complicated. Huge quantities of materials were put to use for the production of various commodities. Employment of a large labour force became necessary. Above all, the production process became long and round about. Under these conditions, ascertainment of the cost of production of various lines of products and services became necessarily complex. It was at this time (i.e., prior to the First World War) that eminent authors like F.W. Taylor, Gantt, and Emerson seriously thought over the problem and enunciated a new discipline in the sphere of accounting viz., Cost Accounting. Countries involved in the First World War began to feel that some methods should be devised to control expenditure and to eliminate waste. Such control of expenditure could not be exercised by financial accounts kept in the conventional way. Cost Accountants began to occupy the vital role. Accountants were again called upon to maintain cost records, supply the actual cost figure to the management, help them to formulate competitive pricing policies and keep systematic cost accounts for which all

efforts were made earlier. This stage of development in accountancy is known as Cost Accounting.,

Third Stage:

Integration of Cost and Financial Accounts

Later, it was experienced that mere ascertainment of the production cost will be of little use unless the cost data are reconciled with the figure revealed by financial accounts. Thus the concept of integration of cost and financial accounts originated. As the sources of collecting data for cost as well as financial information were the same and as the cost of production and value of sales were easily available the financial records, the integrated system of accounts was treated as the basis.

Fourth Stage:

Business Forecasting and Standard Costing

Even upto the end of the first thirty years of this century, the principles of accountancy were found useful only as means to deliver the historical figures concerning costing and financial transactions. However, it was soon realised that by introducing new methods and extending the scope of accountancy, it could be used by management for exercising operational control and for logical forecasting of the activities. The concept of accounting went through radical changes. A good number of authors, economists and accountants from all parts of the western countries contributed their thoughts on various topics from time to time. Pure financial operation and results were now represented through various graphs, charts, diagrams and visual aids. Accountants went a step further in organising the systems of accounting so as to reveal various significant figures of the operations "as they should be" (i.e., forecasting) rather than simply supplying the figures "as they were". This gave rise to the practice of budgeting the figures i.e., logical forecasting of financial 'deficit or surplus' was practised in government departments but never before it was practised in controlling the financial cost operations.

During the course of last thirty years or so, the most outstanding development achieved in the area of cost accounting is the introduction of Standard Costing, the principles of which are based on the concept of budgeting. Material variances, labour variances and cost variances

representing the differences between standard cost figures and actual cost data, give the clue to the management for the purpose of cost control. Further, all round developments in cost accounting (including the system of Marginal Costing, Cost -Profit -Volume Theory etc.) prove the fact that accounting is motivating the management to improve its efficiency by operating at economic cost so as to derive the maximum utilisation out of the minimum. This stage of development of accounting can be captioned as "Rise of Management Accounting".

Fifth Stage:

Budgetary Control

Mere ascertainment of cost is no longer sufficient as the economic activities of today are so complex and diverse, the market is so wide and competition is so keen that the management of today is interested in not only knowing the costs of production but also in 'Controlling' the costs. This is possible only if the management is aware of all the particulars regarding financial, cost, operational and managerial performances and the deviations from the standards, the effective compliance of systems, method and procedures and the suggestions for controlling activities within appropriate time. New techniques were invented to present the accounts periodically (instead of at the end of the accounting year) to the management in such a manner that the achievements could be easily compared with the budgeted data in order to exercise control, if necessary. Such techniques were termed as 'Management Accounting' for the first time in 1950 by the British Team of Accountants sponsored by Anglo -American Productivity Council.

Thus, the last four decades have witnessed an almost starting changes in the development of accounting from a mere device of recording and compiling of income and expenditure relating to past business events to a formidable instrument of forecasting, planning, and regulating business activity. It is only during the last thirty years that accounting has been developed as an internal administrative aid to business management.

1.3 FINANCIAL MANAGEMENT - CONCEPT

Financial management is concerned with the planning and controlling of the firm's financial resources. Phillippatos point out that, Financial

Notes

Management is concerned with the managerial decisions that result in the acquisition and financing of long-term and short-term assets of the firm.

According to Ezra Solomon, "Financial Management is concerned with the efficient use of an important economic resource, namely, capital funds". Thus, the financial management is mainly concerned with the proper management of funds or optimum utilization of funds. It refers to that part of management activity, which is concerned with the planning, and controlling of firm's financial resources. It deals with finding out various sources for raising funds for the firm. The sources must be suitable and economical for the needs of the business. The most appropriate use of funds also forms a part of financial management.

importance of Financial Management

Finance is the lifeblood and nerve centre of a business, just as circulation of blood is essential in the human body for maintaining life; finance is a very essential to smooth running of the business. The importance of financial management has arisen because of the fact that present day business activities are predominantly carried on company or corporate form of organisation.

The financial management is important not only to the practicing managers, but also to other who deal a corporate enterprise, such as investors, lenders, bankers, creditors, etc., as there is always a scope for the management to manipulate and 'window dress' the financial statements.

Financial management is applicable to every type of organisation, irrespective of its size, kind or nature. Where there is a use of finance, financial management is helpful. Every management aims to utilise its funds in a best possible and profitable way. So this subject is acquiring a universal applicability. It is indispensable in any organisation as it helps in:

- i. Financial planning and successful promotion of an enterprise;
- ii. Acquisition of funds as and when required at the minimum possible cost;
- iii. Proper use and allocation of funds;
- iv. Taking sound financial decisions;
- v. Improving the profitability through financial controls;
- vi. Increasing the wealth of the investors and the nation; and
- vii. Promoting and mobilizing individual and corporate savings.

1.4 OBJECTIVES OF FINANCIAL MANAGEMENT:

Financial Management

Notes

The operative objective of financial management is as follows:

1) Profit Maximisation:

The objective of financial management is profit maximisation. It cannot be the sole objective of a company as there is a direct relationship between risk and profit. In this objective, risk factor is ignored. Sometimes, higher the risk, higher is the possibility of profits. Hence, risk has to be balanced with the objective of profit maximisation. Even though, the profit maximisation objective suffers from the following disadvantages i.e.,

- i) It is vague,
- ii) It ignores the timing or returns. Time value of money is not taken into account.
- iii) It ignores risk and uncertainty.

2) Maximisation of Wealth:

The objective of a firm is to maximize its wealth and the value of its shares. According to van Horne value is represented by the market price of the company's common stock... The market price of a firm's stock represents the total judgement of all market participants as to what the value is of the particular firm. It takes into account present and prospective future Earnings per share (EPS) the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock. The market price serves as a performance index a report card of the firm's progress; it indicates how well management is doing on behalf the of stock holders.

Maximisation of wealth implies that the financial objective of a firm should be to maximize the market value of its ~~share~~ and it ~~should~~ be in absolute harmony with the interests of creditors, employees and society.

The concept of wealth in the context of wealth maximisation objective refers to the shareholders wealth as reflected by the market price of their shares in the share market. Hence maximisation of wealth means maximisation of the market price of the equity shares of the company.

Check your progress**1. State True or False**

- a) Traditionally the role of Finance Manager was restricted to acquisition and efficient allocation of funds.
- b) Efficient management every business is closely linked with efficient management of its finances.
- c) Main objective of financial management is maximization of profits.
- d) Traditional approach restricted the scope of financial management to arrangement of funds.
- e) A finance manager's concern must be to maintain liquidity rather than profitability.

3) Other objectives:

Apart from the above basic objectives, the following are the other objectives of financial management.

- i) Ensuring a fair return to shareholders;
- ii) Building up reserves for growth and expansion;
- iii) Ensuring maximum operational efficiency by efficient and effective utilisation of finances and
- iv) Ensuring financial discipline in the organisation.

1.5 FUNCTIONS OF FINANCIAL MANAGEMENT

To quote Ezra Solomon, "the function of financial management is to review and control decisions to commit or re-commit to new or ongoing uses. Thus, in addition to raising funds, financial management is directly concerned with production, marketing and other functions within an enterprise whenever decisions are made about the acquisition or distribution of assets."

Apart from that above definition, some of the financial areas covered in financial management are discussed as such:

1. Determining Financial Needs:

A finance manager should determine financial needs of the enterprise. Funds are needed to meet promotional expenses, fixed and working capital needs. The requirements of fixed assets are related to the type of industry. A manufacturing concern will require more investments in fixed assets than a trading concern.

2. Selecting the sources of funds:

A number of sources may be available for raising funds. A concern may resort to issue of share capital and debentures. Financial institutions may be requested to provide long-term funds.

3. Financial Analysis and interpretation:

A finance manager is expected to know about the -profitability, liquidity position, short-term and long-term financial position of the concern. For this purpose, a number of ratios have to be calculated. The interpretation of various ratios is also essential to reach certain conclusions. Financial

analysis and interpretation has become an important area of financial management.

4. Cost - volume -profit Analysis

This is an important tool of profit planning. A finance manager will be to recover all costs. He will aspire to achieve break-even point at the earliest. It is a point of no-profit no-loss. Any production beyond break-even point will bring profits to the concern. The volume of sales, to earn a desired profit, can also be ascertained.

This analysis is very helpful in deciding the volume of output or sales. The knowledge of cost-volume profit analysis is essential for taking important decisions about production and profits.

5. Capital Budgeting

Capital Budgeting is the process of making investment decisions in capital expenditures. It is an expenditure the benefits of which are expected to be received over a period of time exceeding one year. It is an expenditure incurred for acquiring or improving the fixed assets, the number of years in future.

6. Working capital Management

Working capital refers to that part of the firm's capital, which is required for financing short term or current assets such as cash, receivable and inventories. It is essential to maintain a proper level of these assets. Finance manager is required to determine the quantum of such assets.

7. Profit planning and control:

Profit maximisation is, generally, considered to be an important objective of a business. Profit is also used as a tool for evaluating the performance of management. Profit is determined by the volume of revenue and expenditure.

Revenue may accrue from sales, investments in outside securities or income from sales, investments in outside securities or income from other sources. Profit planning and control directly influence the declaration of dividend, creation of surpluses, taxation etc. Break-even analysis and cost-volume-profit relationship are some of the tools used in profit planning and control.

8. Dividend Policy

Dividend is the reward of the shareholders for investments made by them in the shares of the company. The company should distribute a reasonable amount as dividends to its members and retain the rest for its growth and survival.

Thus, the dividend policy is an important area of financial management because the interests of the shareholders and the needs of the company are directly related to it.

1.6 SCOPE OF FINANCIAL MANAGEMENT

A financial manager will have to concentrate on the following areas.

1. Estimating Financial Requirements

A financial manager has to estimate short-term and long-term financial requirements of his business. For this, he will prepare a financial plan for present and future. The amount required for purchasing fixed assets as well as needs of funds for working capital will have to be determined.

2. Deciding capital structure

The capital structure refers to the kind and proportion of different securities for raising funds. After deciding about the quantum of funds required it should be decided which type of securities should be raised. A decision about various sources for funds should link to the cost of raising funds.

3. Selecting a source of finance

After preparing a capital structure, an approximate source of finance is selected. Various sources from which finance may be raised, include, share capital, debentures, financial institutions, commercial banks, public deposits, etc., the need, purpose, object and cost involved may be the factors influencing the selection of a suitable source of financing.

4. Selecting a pattern of Investment.

When funds have been procured then a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. A decision will have to be taken as to which assets are to be purchased? The funds will have to be spent first on fixed assets and then an appropriate portion will be retained for working capital. The decision making

techniques such as Capital Budgeting, opportunity cost analysis etc. may be applied in making decisions about capital expenditures.

5. Proper cash management

A financial manager / management has to assess various cash needs at different times and then make arrangements for arranging cash. Cash may be required to

- a) Purchase new materials,
- b) Make payments to creditors,
- c) Meet wage bills,
- d) Meet day-to day expenses.

The usual sources of cash may be:

- a) Cash sales
- b) Collection of debts,
- c) Short-term arrangements with banks etc.

The Cash management should be such that neither there is a shortage of it and nor it is idle.

6. Implementing Financial controls

An efficient system of financial management necessitates the use of various control devices. Financial control devices generally used are:

- a) Return on investment,
- b) Budgetary control,
- c) Break-even analysis
- d) Cost control
- e) Ratio analysis
- f) Cost and internal audit.

Return on investment is the best control device to evaluate the performance of various financial policies. The higher this percentage, better may be the financial performance. The use of various control techniques by the finance manager will help him in evaluating the performance in various areas and take corrective measures whenever needed.

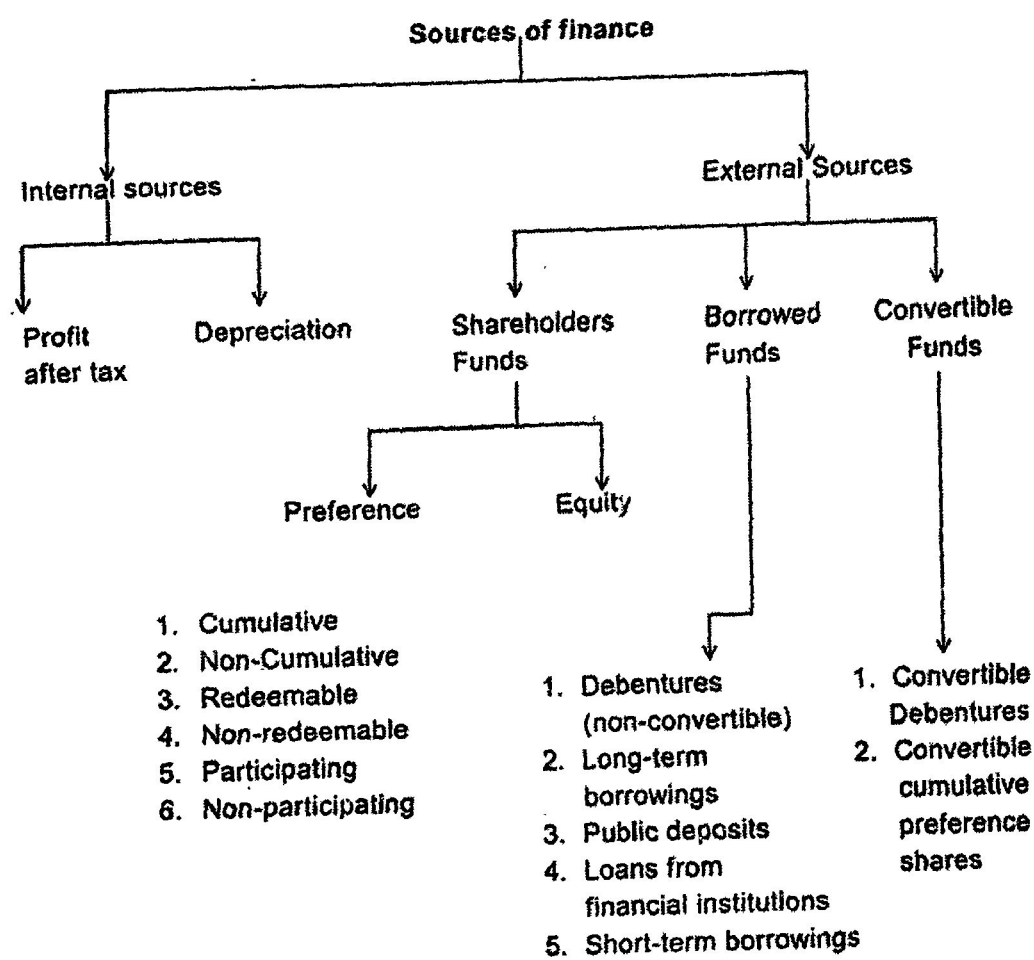
7. Proper use of surpluses

The utilisation of profits or surplus is also an important factor in financial management. A judicious use of surplus is essential for expansion and diversification plans and also in protecting the interests of shareholders.

A balance should be struck in using funds for paying dividend and retaining earnings for paying dividend and retaining earnings for financing expansion plans, etc., the market value of shares will also be influenced by the declaration of dividend and expected profitability in future. So, a finance manager should consider the influence of various

- factors, such as:
- a) Trend of earnings of the enterprise,
 - b) Expected earnings in future.
 - c) Market value of shares.
 - d) Need for funds for financing expansion etc.

A judicious policy for distributing surpluses will be essential for maintaining proper growth of the unit.



1.7 SOURCES OF FINANCE

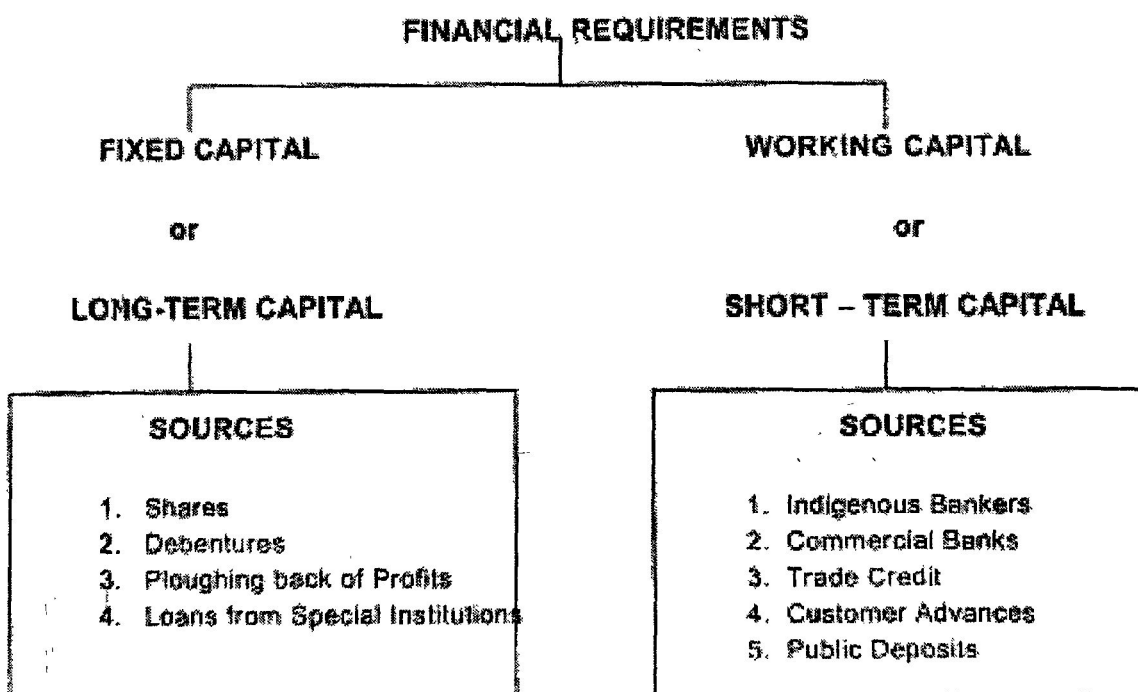
Having determined the quantum of fixed and working capital requirements, the company has to select the sources of finance to mobilize the required amount. Various sources are available for company to raise funds to meet its permanent and short-term financial requirements.

A company can be financed in two ways (1) by raising Owned Capital and (2) by raising Borrowed Capital. The following chart shows the different sources of for a company to raise its fixed and working capitals. The regularly maintained in the business) can be financed by means of the same long-term sources which are used for fixed capital requirements.

Sources of long term capital

1. Shares

Issue of shares is undoubtedly the best method for the procurement of fixed capital. Moreover the company limited by shares" must have its share capital. The capital is divided into many units of equal value and each unit is known as the shares of the company. These shares are issued by the company to mobilize its capital and the persons who are purchasing the shares become the shareholders of the company concerned and thereby acquire the rights of ownership. So, each shareholder is entitled to share the company's profits on the basis of the value of shares he holds. At the time of winding up of the company, the share capital will be repaid to the share holders after paying off all other liabilities of the company. Hence in short, a share is right to receive a certain portion of profits and of the capital of a company when it is wound up".

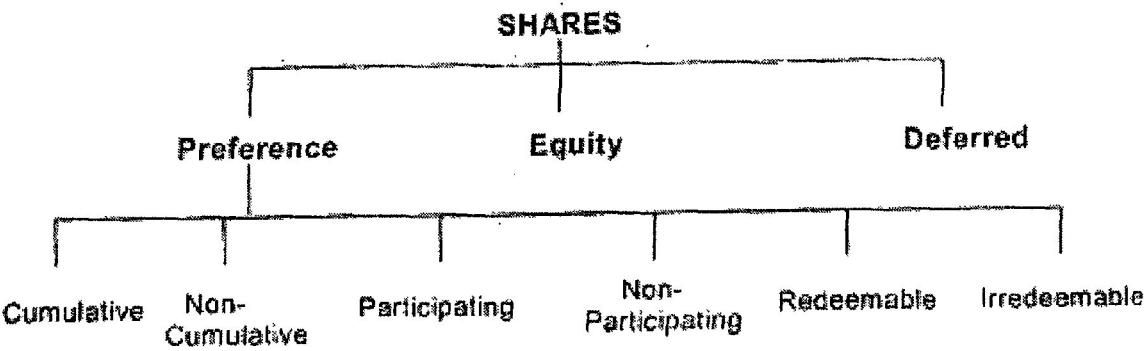


Kinds of shares:

There are three common kinds of shares:

- 1. Preference Shares
- 2. Equity or Ordinary Shares.
- 3. Deferred or Founder's Shares.

All or any of these shares may be issued by a private company. But a public company can issue only the first two kinds of shares. Viz Preference and Equity shares.



1. Preference Shares

A preference share is that part of the share capital of the company which possesses both the following features.

- 1. It carries a preferential right in record to payment of dividends and also.
- 2. It carries a preferential right in regard to repayment of capital.

Preferential right in respect of dividends means that the preference shareholders will get a fixed rate of dividend before any amount of dividend is distributed among the other classes of shareholders. Likewise, they will have priority over the other shareholders to get back their share of capital in case of winding up of the company. In short, preference shares carry a preferential right over others regarding payment of return on capital and payment of dividend.

Kinds of Preference Shares :

Preference Shares may be of different classes:

- 1. Cumulative preference Shares and Non-Cumulative Preferences Shares.
- 2. Participating Preference Shares and Non-participating Preference Shares.

3. Redeemable Preference Shares and Irredeemable Preference Shares.

1. Non-Cumulative and cumulative Preference Shares:

If the profit is inadequate to declare dividend, they cannot get their dividends in that year nor can they claim it in the subsequent years (during which periods there might be enough profit) as arrears. So the arrears of preference dividends in this case are not accumulating.

Contrary to the non-cumulative preference shares, the cumulative preference shares, equip the holders with the right to 'collect the arrears of dividend in the periods of prosperity. if no dividend is declared in a certain year, these shareholders have, a right to receive the same in the subsequent years.

Thus, arrears of dividend go on accumulating and one day they may be realised. For instance if in 1985 there were no profits but in 1986 there are good profits dividend will be paid both for 1985 and 1986 in the case of cumulative preference shares. In the case of non-cumulative preference shares dividend will be paid only for 1986.

2. Non-Participating and Participating Preference Shares:

In general the preference shareholders will get their dividend at a fixed rate and the rest of the divisible profit will be distributed among the other classes of shareholders. Normally the preference shareholders will not get more than the fixed dividend. That is why the preference shares may be called Non-participating Preference shares.

Sometimes, the preference shareholders may be given extra dividend over and above their fixed rate after dividend at a certain rate has been paid on equity shares. They are the holders of participating preference shares i.e., such shareholders will participate in the surplus of profits remaining after the payment of both equity and preference dividends.

3. Irredeemable and Redeemable Shares:

Generally, the preference shareholders are not to be repaid their share of capital on any occasion excepting in the event of winding up of the company. These shares are irredeemable. Anyhow, the Act provides for facility to issue Redeemable Preference Shares also. The Capital raised through the issue of redeemable preference shares is to be paid back by the

company to such shareholders after the expiry of the stipulated time. Some important conditions to be fulfilled before the redemption of these shares are

1. Such shares must be fully paid up.
2. These shares can be redeemed either by utilizing the divisible profits or out of the proceeds of fresh shares issued for this purpose.
3. If the shares are to be redeemed out of the profits, a Capital Redemption Reserve Fund must be created by transferring to it an amount of profits equal to the nominal value of the shares to be redeemed.

Advantages of Preference Shares:

As a source to raise fixed capital, preference shares carry the following advantages:

1. By issuing the preference shares, capital can be raised even from the very cautious investors who want to get a stable return on their investments. Since the preference shares carry a fixed rate of dividend they may prefer this type of shares.
2. The Preference shareholders can vote only on such resolutions which are directly affecting their own interests. This practice enables the promoters and the equity shareholders to retain their controls over the company.
3. As these shares are carrying fixed dividend and are usually not participating in the rest of the profit, the company can declare higher rate of dividend to the equity shareholders.
4. These shares can be issued as a bonus for the buyers of equity shares to increase their sales.
5. If a company wants to raise share capital for a short period only, it can issue 'Redeemable preference Shares and the shares can be paid back after the company has built up Capital Reserve Fund out of its profits.
6. The issue of Preference Shares is the most advantageous way of raising finance than through Debentures How?
 - a) No property of the company need be mortgaged
 - b) Dividend on these shares will be declared only if there is sufficient profit in the company, but in the case of Debentures, interest should be given even if there is a loss.

Demerits of Preference Shares:

Despite the merits as enunciated above the following demerits are associated with the issue of Preference Shares.

1. Preference Shares create a permanent burden on the company in the sense that every year dividend at a fixed rate is to be paid to the preference shareholders. If the preference shares are cumulative, all the arrears on the shares have to be paid during the period of prosperity.
2. Issue of preference shares affects the prosperity of the equity shareholders as the holders of preference shares have got priority in the payment of dividend and in the repayment of capital. It may reduce the value of equity shares in the open market.
3. The creditors of the company may be afraid of the consistent declaration of dividend on preference shares during the period of financial crisis. Because, when the concern goes into winding up, the creditors may find no fund in the company to get back their money.
4. Another serious disadvantage of preference shares is that the dividend on preference shares cannot be deducted for income tax purposes.

2. Equity Shares

By sec. 85 (2) of the companies Act Equity shares means those shares which are not preference shares. Thus, the Equity shares (Ordinary Shares) have no such preferential right in the distribution of profit or in the repayment of capital as in the case of preference shares. Dividends on the equity shares are declared only after the payment of preference dividend and the rate of dividend depends on the amount of profit and the decision of the Board of Directors.

On the occasion of winding up of the company, the equity shares will be paid back only after the repayment of preference share capital. As the preference shareholders can exercise their voting right only on those resolutions which are directly affecting their own rights. Virtually the equity shareholders are controlling the whole affairs of the company. Holders of equity shares normally earn more dividends when the company is marching towards prosperity. But at the same time they run the risk of getting nothing in the days of adversity. They are really the risk bearers.

Advantage of Equity Shares:

As a method of raising long term Capital, the equity shares carry the following merits.

1. Equity Share Capital need not be repaid until the business is wound up, Hence, it is the best method for raising long term Capital.
2. Since the dividend on these shares will be declared only if there is enough profit, it does not impose any financial burden on the company in this way, these shares are most advantageous to a company than the debentures or the preference shares.
3. As these shares are not carrying any fixed rate of dividend, they provide financial flexibility to company.
4. As these shares do not create any charge on the assets of the company, the company can freely mortgage its properties in need.
5. Equity shares enable the company to trade on equity.

Disadvantages of Equity Shares:

- 1) If equity shares alone are issued, certain groups of equity holder may intervene in the affairs of the company and influence the decisions of the Board.
- 2) Raising of capital by equity shares only will prevent the company from trading on equity.
- 3) Excessive issues of equity shares may result in over-capitalisation.
- 4) It costs more for the company to finance with equity shares than with preference shares.

2. Debentures

A debenture is the acknowledgement of debt by a company issued under its common seal. It is document authenticating the loan borrowed by the company concerned. The loan raised by the company may be divided into many uniform parts and each part is known as a debenture. Like shares, they are also offered to the public by means of a prospectus. Each debenture carries interest at a specified rate at regular intervals. Debentures are generally redeemable after the expiry of a fixed period and usually secured by a charge on the company's assets.

The terms and conditions under which they are issued are endorsed on the overleaf of the instrument. As the debenture is the acknowledgement

of a loan given by a person to the company, the holder of the debenture is only the creditor of the company. Hence, we must draw a clear cut line between a Shareholder and a Debenture-holder.

The following are the points of distinction between a shareholder and a debenture-holder.

Share Holder	Debenture holder
1) He contributes to the Share Capital and is a joint owner of the company. That is why a share is known as “ownership security”.	He subscribes to the loan and is a creditor of the company. That is why a debenture is known as “creditorship security”.
2) He gets dividend which is varying with the profits made by the company. If there is no profit he will get no dividend.	He gets a fixed rate of interest due to him whether the company makes profit or not.
3) He has voting right in any meeting of the company and by this way he has a say in the management of the company.	He has no voting right in the meeting of the company. So he cannot have a say in affairs of the company.
4) In the event of liquidation of the company his claims will be met only after all claims of the outsider are fully paid.	His claims must be paid before anything is paid to the share holders.
5) His contribution to the share capital, except in the case of redeemable preference shares, cannot be repaid unless legal formalities regarding reduction of share capital are observed	His debentures are generally redeemed after the expiry of a fixed period.

Different Classes of Debentures:

Debentures may be classified from different viewpoints:

1. From the point of view of Security:

a) Naked or unsecured or simple debentures are issued without any specific charge on the company’s assets other than the company’s promise to repay the amount

b) Secured or Mortgage debentures are those which are secured by mortgage or charge on some or all the assets of the company.

2. From the point of view of Registration:

(a) Registered debentures are issued by registering all the particulars about the debenture holder in a Register of the Debenture holders maintained by the company. If there is any transfer of such debentures, the transfer should be recorded in the Register.

(b) Bearer debentures are issued by the company without keeping any records about the holders. The transfer of these debentures can be effected by mere delivery. Interest on the debentures will be paid to the person who is producing the coupon attached to debentures.

3. From the point of view of repayment/redemption:

a) Redeemable debentures are repaid or redeemed after the expiry of the specified term.

b) Irredeemable debentures or perpetual debentures are those in respect of which no time is fixed to redeem the debentures. The company can redeem the debentures at any time it chooses.

4. From the point of view of status:

a) Equitable debentures are those which are secured by the deposit of titles of the property and by creating a charge by means of a memorandum.

b) Legal debentures are those for which the legal ownership of the properties is transferred by a deed to the debenture holders as security.

5. From the point of view of priority

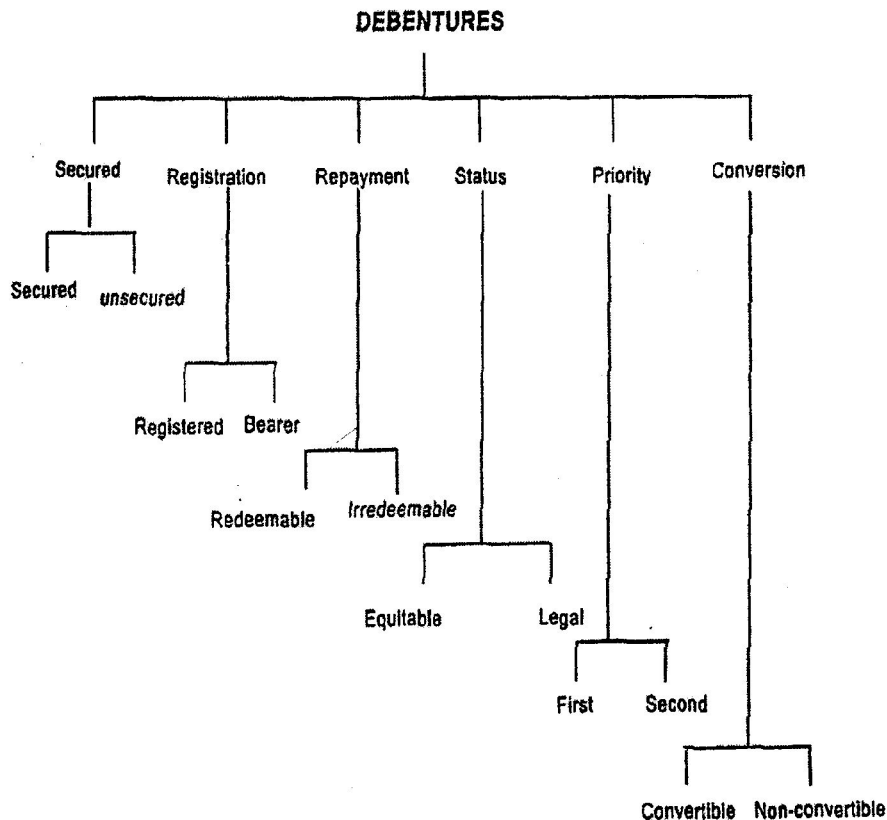
a) Preferred or First Debentures should be repaid before any other debentures.

b) Ordinary or Second debentures are those which should be paid only after the First Debentures are repaid.

6. From the point of view of priority:

a) The holders of Convertible Debentures are given an option to exchange their debentures for shares in the company under certain conditions,

b) The holders on Non-convertible Debentures are not given option. They cannot exchange their debentures for shares.



Merits of Debentures:

As a source of long term finance, debentures carry the following merits.

1. By issuing the debentures the company is enabled to have the capital without giving any right of control to their holders.
2. As the debentures are usually repaid after the expiry of a long period, there is a certainty of the availability of finance and the company can adjust its financial plan accordingly.
3. The company is required to pay interest at a fixed rate and it is usually found that the rate of interest payable on it is much lower than the rate of dividend payable on shares.
4. The issue of shares enabled the company to trade on equity.
5. It gives an opportunity to the company to tap even cautious investors who expect a fixed income regularly on his investment.
6. If a company has already incurred some small debts, it is most beneficial for the company to convert all these small debts by a single issue of debentures.

Limitations of Debentures:

1) In spite of the fact that debentures offer many advantages, a source of long-term capital, it is not suitable for the following companies.

a) Companies whose earnings are highly fluctuating. For these companies, the fixed interest of the debentures will be a heavy burden at the time of lesser earnings.

b) Companies whose securities are not sufficiently large to issue debentures.

c) Companies manufacturing luxury goods which are not having a permanent demand in the market.

d) Companies which are unable to earn a rate of profit greater than the rate of interest payable on debentures.

3. Ploughing Back of Profits

To feed the growing need of finance, the companies may retain and invest a part of the profits earned. Instead of declaring all the earnings as dividend on shares, a portion of the profits may be utilized to finance expansions and improvements. As the earnings are again reinvested in the business, this method is rightly called "ploughing back of profits". Since it depends on internal source for its finance, it is otherwise known as "internal financing" or "self-financing".

Merits of ploughing back of profits:

1. The ploughing back of profits method or internal financing has come with many advantages over external financing. It is easily acceptable that the prudent way of financing the company is utilizing the internal source rather than borrowing loans from outsiders. In this sense, this scheme is more beneficial and profitable to a concern.
2. This is a simple and cheaper method, because it involves no legal formalities and carries no interest.
3. This method brings about greater financial stability of the concern.
4. The shareholders also stand to gain in the long run because of the increased prosperity of the concern and the increase in the value of their shares.

Limitation of a ploughing back of profits:

Retainment of profits means curtailment of dividend to the shareholders. Limitless reinvestments of earnings will hurt the shareholders. The shareholders who are sensitive will drop those shares which are not fetching handsome returns and switch over to those shares which yield more.

So a more restrictive or conservative dividend policy will lead to a destructive fall in the value of the shares. Hence, balanced dividend policy which is not affecting the welfare of the shareholders should be followed. Then only the ploughing back scheme will benefit the enterprise.

Loans from Special Institutions

The entrepreneurs can also collect their Fixed Capital (Long-term capital) by borrowing loans from some special institutions established for this purpose. The following institutions are rendering such financial assistance to enterprise.

1. Industrial Development Bank of India.
2. Industrial Finance Corporation of India
3. Industrial Credit and Investment Corporation of India.
4. State Financial Corporations.
5. National Industrial Development Corporation.
6. Investments Trusts.
7. Life Insurance Corporation of India.

Sources of Short-term Capital

1. Indigenous Bankers:

The indigenous bankers such as shroffs, money-lenders, country bankers and loan houses have been meeting the financial requirements of the business concerns since long ago.

They are giving normally short-term loans but long-term loans can also be raised from them. Their speciality is the lending of money even on personal security without demanding collateral security. But they will collect a very high interest on their loans.

They were more prominent before the commercial banks were developed. But it does not mean that now-a-days they have lost their hold completely in the financial field. The concerns which could not get advances

from any other source and are not having any valuable security (particularly small concerns) are seeking the help of these indigenous banks.

2. Commercial Banks:

Commercial banks are the most important source of short-term funds. The banks are lending loans and advances out of the deposits received from the customers. These deposits can be withdrawn by the depositors at short notice. That is why the commercial banks could not lend any long-term finance.

As they have to retain always particular part of assets in liquid form, they are participating only in the field of short-term finance.

The commercial banks meet the short-term requirements of business concerns in two ways.

- a) By granting advances, overdraft and cash credit and
- b) By discounting bills, promissory notes and other commercial papers.

The banks are always granting loans, advances and cash credits only with the full backing of tangible and easily realizable assets. This is necessary for a bank to maintain its liquidity and security against any future loss. But it creates hardships to those concerns which are not having any such asset.

The rate of interest levied by the commercial banks on its loans and advances is comparatively low and due to this attractive gesture the business concern are leaning towards these banks for satisfying their short-term requirements.

Discounting bills and promissory notes means giving loans on these securities before the date of maturity. For this service the banks charge an amount known as "discount". This is also one of the easy methods to get money from banks.

3. Trade Credit

Trade credit represents the credit granted by a manufacturer to a wholesaler to a retailer. The duration of such credit usually runs between 30 and 90 days. This is granted by the seller to the buyer only on the buyer's personal guarantee.

Normally, no security is demanded by the creditor and no interest is also charged for this loan. But the price of the article is slightly higher than the cash price. This is purely a source of short term finance.

4. Customer Advances

If the product of a company is having good demand in the market, the buyers will give advances even before the product is produced. This advance represents part of the price and can be treated as a short-term finance. The advance carries an interest and the period of such credit depends upon the time taken to deliver the goods.

5. Public Deposits

Some companies are accepting deposits directly from the public for periods varying from one year to five years. The deposits carry a fixed rate of interest. Usually companies are giving a higher rate of interest to the deposits made by their shareholders and employees than the rate given for the public. If a company has a financial reputation in the society, the public may be tempted to deposit their savings with the company for a certain rate of interest. The Public Deposit Scheme is utilized to meet the working capital requirements. At the initial stage this system was very popular among textile mills in Bombay and Ahmedabad and the tea gardens of Bengal and Assam only. But, now-a-days almost all the industries are utilizing this source of finance to a great extent.

Merits of Public Deposits:

As a source of short-term capital the public deposit scheme has the following merits.

1. The system involves simple legal formalities.
2. Through this system, capital can be procured without creating any charge on the properties of the company.
3. While the depositor gets a rate higher than that offered by banks, this method of financing is cheaper to companies as the rate of the interest payable on the deposit is comparatively lower than the bank rate on loan.
4. If a part of capital is collected by issue of shares and the balance by public deposit, after paying the fixed rate of interest on public deposits, higher rate of dividend can be declared on equity shares.

Check your progress

2. Fill in the Blanks

a) The most important objectives of financial management are profit maximization and _____.

b) To achieve wealth maximization the financial manager has to take _____ decision.

c) Management to all matters related to finance is called _____.

3. Say True or False

a) Allocation of resources will avoid interest.

b) Financial accounting and Financial Management convey the same meaning.

5. This system proves useful to the cotton industry which utilizes profitability the deposits at the time of purchasing raw cotton in the season, and pays back the deposits after the finishing products are sold.

Demerits of Public Deposits:

1. This source of finance is risky. During the period of depression the public may be tempted to withdraw the deposits. When the money is withdrawn at such a time that the company needs more money, the concern will fall into a financial crisis. In this system, finance is available in boom period but not in the period of depression. So, public deposit method is a "fair weather friend" and not a "bad weather friend".
2. If the deposits are not repaid when the depositors call it back, the goodwill and the reputation of the company will be adversely affected.

VI. Capital Gearing

We have already discussed three kinds of securities - viz.

1. Equity shares
2. Preference shares
3. Debentures.

When a company decides to issue more than one kind of securities, then it has to determine in what proportion the various kinds of securities are to be issued. This problem relates to "Capital Gearing". In other words, the term 'gearing' stands for the ratio of the various types of securities to total capitalization. A company is said to be highly geared when the proportion of equity capital to total capital, is low it is to be below-gearred when the proportion of equity capital to total is high.

In other words, a company is said to be highly geared when it has agreed to pay a fixed rate of interest or dividend on a very large proportion of its funds. On the contrary, it may be described as being low geared if it is not. For instance, if out of a company's total capital of Rs.15 lakhs, the ordinary shares provided for Rs.5 lakhs and the balance is in the form of preference shares and debentures, it is said to be "highly geared". If the ordinary shares provided for RS, 10 lakhs out of the total capital of Rs.15 lakhs it is said to be "low-gearred".

Which type of security should be issued in large proportion and which in small proportion are to be decided by considering the following factors which are affecting the capital gearing.

1. Trade on Equity:

The securities other than the equity shares carry only a fixed rate of interest. If this fixed rate of interest is lower than the general rate of company's earnings, the equity shares will get all the additional profits after giving the fixed rate of interest to other securities.

Thus trading on equity is an arrangement under which a company makes use of funds collected through the issue of securities carrying a fixed rate of interest in such a way as to increase the rate of dividend on the equity shares. This factor encourages the companies to issue more number of fixed interest bearing securities than the equity shares. It enables the equity shareholders to gain more.

2. Idea of Retaining Control:

The equity shares alone carry the voting power in all the matters of the company and the other securities (for instance debentures) have no such power. Hence the promoters of the company may issue securities other than equity with the two-fold purpose of collecting large capital and at the same time retaining their control over the company.

3. Requirement of Investors:

There are many kinds of investors. Mr. Nixon aptly says "Mr. Cautious invest in preference shares. Mr. Speculative in deferred shares, Mr. Medium in ordinary shares. But Mr. Wiseman invests in all kinds of shares in due proportion".

b) Financial accounting and Financial Management convey the same meaning

To satisfy all these types of investors, a company has to issue all kinds of shares. The proportion of the shares issued is depending upon the character of the investors in that particular market.

4. Cost of Financing:

As the funds are collected at varying cost by the issue of different

kinds of securities, the cost of financing also plays a prominent role in the selection of securities. While selecting a type of security to be issued, the company has also to take note of the cost of issuing that particular security.

5. Elasticity of Capital Structure:

Elasticity or flexibility is an essential sine qua non of an ideal capital plan. The capital structure of a concern should be constructed in such a way as to give room for any future expansion or contraction of capital. The existing capital structure should not put any handicap in the way of issuing fresh shares for expanding or contracting the capital by way of redemption of some securities.

Hence existence of debentures and redeemable preference shares facilitate future contraction of capital. But too much use of debentures and preference shares makes the capital structure rigid due to the payment of fixed charge. It also emphasises balanced issue of securities.

1.8 KEY TERMS

- **Business Finance:** The activity concerned with planning raising, controlling and administering of the funds used in the business.
- **Controller:** The official concerned with the management and control of the firm's assets.
- **Financial Management:** The entire gamut of managerial efforts concerned with raising of funds at optimum cost and their effective utilization with a view to maximize the wealth of the shareholders.
- **Treasurer:** The official concerned mainly with managing the firm's funds.

1.9 SUMMARY

This chapter has covered the introductory aspects of financial management. By reading the definition, scope, objectives, function and sources of financial management, the students can be comfortable in reading further chapters.

The logic, concept and background of financial management will make the students strong in the basics.

1.10 ANSWERS TO CHECK YOUR PROGRESS

1. a) False 1 b) True 1. c) False 1. d) True 1. e) False
2. a) Wealth Maximisation b) Investment c) Finance
3. a) False b) False

1.11 QUESTIONS AND EXERCISES

1. Distinguish between fixed capital and working capital.
2. Describe briefly the various sources of fixed and working capital in India?
3. What are the basic sources from which an industrial enterprise can raise its long-term capital?
4. What is debenture? Describe the various types of debentures and their merits and demerits as a source of raising finance.
5. What do you understand by the term "Capital gearing"? Explain the factors which are affecting capital gearing.

1.12 FURTHER READING

- | | |
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UNIT 2 ANALYSIS OF FINANCIAL STATEMENTS & ACCOUNTING RATIOS

*Analysis of financial
statements accounts
ratios*

Structure

NOTES

- 2.0 Introduction
- 2.1 Unit Objectives
- 2.2 Analysis of Financial Statements
- 2.3 Accounting Ratios
- 2.4 Key Terms
- 2.5 Summary
- 2.6 Answers to Check your progress
- 2.7 Questions / Exercises

2.0 INTRODUCTION

The basis for financial analysis, planning and decision making is financial information. A business firm prepares its final accounts viz., Balance sheet and profit and loss Account which provide useful financial information for the purpose of decision making. Financial information is needed to predict, compare and evaluate the firm's earning ability. The latter Balance sheet depicts the balance value of the acquired assets and of liabilities at a particular

Point of time. However, these statements do not disclose all of the necessary and relevant information. For the purpose of obtaining the material and relevant information necessary for ascertaining the financial strengths and weaknesses of an enterprise, it is necessary to analyse the data depicted in the financial statement. The financial manager has certain analytical tools which help in financial analysis and planning. For instance, a cash flow statement is a valuable aid to a financial manager in evaluating the inflows and outflows of cash i.e. sources and applications of cash during particular period. In addition, ratio helps the manager to analyse the past performance of the firm and to make future projections.

2.1 UNIT OBJECTIVES

Understand the meaning of financial analysis

- Understand the application of financial analysis in decision making
- Identify tools and techniques of financial analysis
- Understand the accounting ratios and its usage.

2.2 ANALYSIS OF FINANCIAL STATEMENTS

In accounting, the term 'Financial Statements' is used to refer primarily to two statements. These two statements, prepared at the end of a given period for a business concern are:

1. Profit & Loss Account and
2. Balance Sheet

1. Profit & Loss Account

The Profit & Loss Account is known as Profit and Loss Statement or Income Statement.

This statement is a very important part of financial statements. The reason is very simple. The main feature of accounting is the determination of net profit of a business concern. This statement matches revenues (e.g. sales) and costs incurred in the process of earning revenues (e.g. cost of goods sold, administrative, selling, distribution and other general expenses).

The following points will be helpful for the proper analysis of financial statements.

1. Sales and other operating revenues are compared with the cost of goods sold to give the Gross Profit.

2. When cost of goods sold exceeds the sales and other operating revenues, the resulting figure will be termed as Gross Loss.

3. From the Gross profit the other operating expenses (e.g. administrative, selling and distributive expenses) are deducted to get what is known as Operating Profit.

4. Non-operating Incomes (e.g. interest, rent etc. derived by a concern whose business is not to deal in finance and property) are added to the operating profit and therefrom other non-operating expenses are deducted in order to get Net Profit before tax.

5. Net Profit after tax is the result when the provision for tax is deducted from the net profit before tax.

6. Finally, other extraordinary losses (e.g. loss by fire, loss on sale of investments) and gains (e.g. gain on sale of investments etc.) are shown net of income-taxes for arriving at the final figure of Net Income.

*Analysis of financial
statements accounts
ratios*

NOTES

Multiple Step Income Statements

Profit & Loss Account is generally prepared in horizontal form. The horizontal form of preparation of Profit and Loss Account has become out of date now-a-days. The presentation of Profit and Loss Account in vertical form and 'multiple-step' is as under:

PROFIT & LOSS ACCOUNT

For the year ended

Rs.

Net Sales	3,61,400	
Less Cost of goods sold	1,64,610	
(i) Gross Profit		1,96,790

GENERAL & ADMINISTRATION EXPENSES:

Rs.

Office salaries	20,000	
Insurance	3,000	
Taxes	15,000	
Depreciation	13,000	
		51,000

SELLING EXPENSES:

Rs.

Advertising	30,000	
Travelling Expenses	10,000	
Depreciation	10,000	
Total Operation Expenses		50,000
		1,01,000
(II) OPERATING PROFIT		95,790

Rs.

Interest Earned	10,000	
Less Interest Expenses	1,000	
		9,000

NOTES

(III) NET PROFIT BEFORE INCOME-TAX

1,04,790

Provision for income-tax 52,000

(IV) NET PROFIT AFTER INCOME-TAX 52,790

Gain on sale of investment net of Income-tax on the gain 10,000

Net Profit 62,790

Single Step Income Statement

It is said that ‘multiple step’ income statement is confusing. In order to avoid any confusion, business concerns now a days, adopt single-step income statement. Under this method, all kinds of income whether operating or non- operating, are collected at one place. All deductions from the total incomes as calculated at the above step will be deducted at one place. The difference represents either net profit or net loss. The following income statement is prepared under ‘single-step’. It is also put in vertical order.

Single Step Income Statement

For the year ended

INCOME:	Rs.
Sales	49,80,000
Interest on Securities	20,000
Miscellaneous	5,000
	50,05,000
DEDUCTIONS FROM INCOME:	Rs.
Cost of goods sold	,75,000
Selling expenses	14,000
Administrative expenses	5,000
Interest on Debentures	1,000
Loss on Debentures	3,000
Provision for tax	50,000
	4,48,000
Net Income for the year	45,57,000

Illustration: 1

During the year 2003, a company made a gross profit @ 25% or sales of Rs. 20,000 and a net profit @ 13% on turnover.

Calculate (i) Cost of goods sold and

(ii) Expenses

Solution:

	Rs.
Sales as given	20,000
Gross Profit at 25% on sales	
20,000 x	5,000
Net Profit at 13% on sales	
20,000 x	2,600
(i) Cost of goods sold = Sales - GP	
= 20,000 - 5,000	15,000
(ii) Expenses = GP - Net Profit	
= 5,000 - 2,600	2,400

*Analysis of financial
statements accounts
ratios*

NOTES

Illustration: 2

Compute the (i) purchases and (ii) sales for the year 1994 from the following: -

- (a) Opening Stock Rs. 30,000
- (b) Closing Stock is Rs. 5,000 less than that of Opening Stock,
- (c) Cost of goods sold Rs. 2,00,000
- (d) Gross Profit on sales 20%

It is better to remember this:

Gross Profit = Sales - Cost of goods sold

Sales = Cost of goods sold + Gross Profit

Cost of goods sold = Sales - Gross Profit

Purchases = Cost of Goods sold + Closing Stock - Opening Stock

Solution:

	Rs.
Opening Stock	30,000
Closing Stock is less by Rs. 5,000 (30,000 - 5,000)	25,000
Cost of goods sold as given	2,00,000

(i) Purchases:

Purchases	=	Cost of goods sold + Closing Stock - Opening Stock
	=	(2,00,000 + 25,000 - 30,000)
	=	Rs. 1,95,000
Sales	=	Cost of goods sold + Gross Profit

Gross Profit on sales - 20%

Therefore, G.P. on cost of goods sold =

(ii) Sales = Rs. 2,00,000 + (2,00,000 x)= Rs. 2,50,000

1. PROFIT & LOSS APPROPRIATION ACCOUNT

It shows the utilisation of profits earned by the business concern. In this account, dividends declared, the amount transferred to general reserve or any other reserve are shown. The balance of this account is shown in the Balance Sheet. The following Profit and Loss Appropriation Account is prepared in horizontal form.

PROFIT & LOSS APPROPRIATION ACCOUNT

For the year ended 31st March 2003

Dr.	Rs	Cr.	Rs.
To interim dividend	12,000	By Balance c/f	20,000
To Proposed final Dividend at 6.25% on Rs.40,000	2,500	By Net Profit for 18,000 the current year	
To Transfer to sinking fund	1,000		
To Balance carried forward	22,500		
	38,000		38,000

II) Balance Sheet

Strictly speaking, a Balance Sheet is a list containing the names of all such accounts which show balances in the ledger. Purchases A/c, Wage A/c, Salaries A/c etc.-all these nominal accounts are transferred to Trading and Profit and Loss A/c at the end of the year and thus closed. They do not show any balances and hence do not appear in the Balance Sheet. As against this Building A/c, Machinery A/c, Debtors A/c, Creditors A/c etc. are not transferred to P & L A/C and thus not closed.. They are shown in the Balance Sheet. Similarly Preliminary Expenses, Discount Allowed on Shares are not transferred in full, to P & L A/c of one year. In such a case, these accounts keep on showing some balances and thus shown in the Balance Sheet until they are fully written off. Hence, it has been remarked that Balance Sheet is a list of balances.

The Balance Sheet is divided into two equal parts. On the left side the liabilities are shown and on the right side the assets are shown. That is why it has been defined that Balance Sheet is a statement of assets and liabilities. Further, the assets of a joint stock company are arranged in the order of permanence. In the case of banking companies, they are arranged in, the order of liquidity. And in the case of insurance companies, the order of arrangements of assets is in the order which is neither an order of permanence nor in the liquidity order.

The sources of capital (owner, loans) are shown on liabilities side and uses of the total capital (land, building, machinery, stock and so on) on the assets side. Since uses of capital in the business must be equal to the sources of capital, the total on the two sides of balance sheet must be equal. This emphasizes that the Balance Sheet is not and does not purport to be a statement of value.

The Balance Sheet may be described as a listing of the source and uses of capital.

Classification of Assets & Liabilities

Assets are classified into

1. Fixed Assets and
2. Current Assets

Fixed Assets are not held for resale. They are held for services that they yield in the production of other goods and services. Fixed Assets are further classified into Tangible Assets and Intangible assets. Tangible assets like Building, Plant & Machinery, Furniture etc. and intangible assets like Goodwill, Patents. Trade Marks etc. are termed as Fixed Assets.

Current Assets are those assets which are reasonably expected to be realised in cash or sold or consumed during the normal operating cycle of the business. The following assets are current assets:

1. Cash
2. Bank Balance
3. Temporary Investments
4. Bills Receivable
5. Debtors
6. Stock-in Trade i.e. inventories.

NOTES

Liabilities are the claims of creditors against the enterprise. Liabilities are also classified as Fixed and Current Liabilities.

All liabilities which do not become due for payment immediately and which do not require current assets for their payment are classified as Fixed Liabilities or Long-term Liabilities.

The terms Current Liabilities are used to describe such obligations which are paid out of current assets or by creating current Liabilities.

- 1. Creditors
- 2. Bills Payable
- 3. Outstanding Creditors for expenses
- 4. Proposed Dividends
- 5. Provision for taxation
- 6. Bank O/D (Sometimes Bank O/D is treated as non-current Liability under the assumption, that arrangement with the bank is permanent).

If we deduct Current liabilities from Current Assets, the difference is termed as working capital.

Like a Profit & Loss A/c the Balance Sheet also can be presented in two ways.

- 1. Horizontal Presentation
- 2. Vertical Presentation

Under Horizontal presentation, assets and liabilities are shown side by side. Assets are shown on the right-hand side and Liabilities on the left-hand side.

The following is example of horizontal presentation of the Balance Sheet of a Sole Trader.

BALANCE SHEET

Liabilities		Assets	
		Rs.	
Rs.			
CURRENT LIABILITES		CURRENT ASSETS	
Outstanding creditors	xxxxx	Cash-in-hand	xxxxx
Creditors	xxxxx	Cash-at-Bank	xxxxx
Bills payable	xxxxx	Bills Receivable	xxxxx
Bank O/D	xxxxx	Debtors	xxxxx

Incomes received in advance	xxxxx	Stock-in-trade investments	xxxxx
FIXED LIABILITIES		FIXED ASSETS	
Loan on Mortgage	xxxxxx	Furniture	xxxxxx
Capital	xxxxxx	Machinery	xxxxxx
Building	xxxxxx	Land	xxxxxx
	xxxxxx		xxxxxx

*Analysis of financial
statements accounts
ratios*

NOTES

Following is the example of vertical presentation of the Balance Sheet of a joint stock company.

HOWARAH COMPANY LTD.,

BALANCE SHEET

As at 31st December 2003

Uses of Funds

FIXED ASSETS :

Rs.	COST	DEPRECIATION	NET
Land	80,000		80,000
Building	1,60,000	16,000	1,44,000
Machinery	48,000	9,600	38,400
Furniture	40,000	4,800	35,200
			2,97,600

CURRENT ASSETS :

Stock-in-Trade	48,000	
Sundry Debtors	32,000	
Bills Receivable	16,000	
Cash at Bank	32,000	
Cash in hand	4,000	
		1,32,000

Less :

CURRENT LIABILITIES :

Sundry Creditors	24,000	
Bills Payable	22,400	
Outstanding Expenses	9,600	56,000

WORKING CAPITAL

		76,000
Total Net Assets		
		3,73,600
Sources of Fund		
SHAREHOLDER FUND:		
Share Capital	3,33,000	
Reserves	40,600	
		3,73,600

Illustration: 3

From the following Balance Sheet of RAMA Co. Ltd., given in conventional form, you are required to prepare Balance sheet in vertical form suitable for comparison purpose showing the working capital percentage to properties funds.

RAMA CO, LTD.,
BALANCE SHEET

As at 31st December, 2003

Liabilities	Rs.	Assets	Rs.
Equity share capital	1,50,000	Fixed assets	2,40,000
Preference share	60,000	current assets	1,80,000
Capital			
Reserves	75,000		
Profit & Loss A/C	15,000		
Current Liabilities	1,20,000		
	4,20,000		4,20,000

RAMA CO. LTD.

BALANCE SHEET

As at 31st December, 2003

(Vertical Form)

*Analysis of financial
statements accounts
ratios*

NOTES

	AMOUNT	PERCENTAGE TO PROPRIETOR'S FUNDS
PROPRIETOR'S FUNDS	Rs.	%
Equity share capital	1,50,000	50
Preference share capital	60,000	20
Reserves	75,000	25
Profit & Loss A/c	15,000	5
	3,00,000	100
CURRENT ASSETS	1,80,000	60
Less Current Liabilities	1,20,000	40
Working Capital	60,000	20
Add Fixed Assets	2,40,000	80
	3,00,000	100

Analysis of Financial Statements

In order to review the performance of a company it is right enough to examine the company's financial statements for only one year. If a reliable idea of the company's performance is to be gathered, its accounts for a period of years (usually two or three years) must be studied, analysed and interpreted.

In modern business usage, financial statements refer to two periodical statements viz.

1. Balance sheet (Statement of Financial Position)
2. Profit & Loss A/c (Income statement)

Analysis of these financial statements probably started with bankers and financiers who wanted to assess the solvency or credit worthiness of their clients before extending credit. In India, it has assumed importance with the rise of institutional finance. Various financial corporations set up by the Central and State Governments use financial statement analysis for their

lending operations. The Controller of Capital issues depended on the financial statement analysis in according sanction for capital issues. The significance of analysing financial statements has increased over time with the growing interest shown by shareholders, creditors, debenture holders, as well as other potential investors in the state of affairs and prospects of public companies. In fact the ownership of many public companies has become truly broad based due to dispersal of shareholding.

Broadly speaking, there are three techniques of financial analysis

1. Comparative Statements
2. Common Size Statements
3. Ratio Analysis

Comparative Statements

A comparative analysis of two years figures of a concern can be easily made. Under the Companies Act, companies must show in their Profit and Loss accounts and Balance Sheet, the corresponding figures for the previous year. Increases in the various assets and liabilities and the proprietary equity capital can be observed by comparison. Similarly the comparison of income statements for two periods helps us to observe the progress of a business. It is better to work out the items in terms of percentage and enter these also in the statements, since comparison of absolute figures has no significance or sometimes is misleading.

Common Size Statements

Financial Statements, when read with absolute figures, are not easily understandable. It is therefore, necessary that figures reported in these statements should be converted into percentage to some common base. For example, in a Balance Sheet, the total of assets or liabilities is taken as 100 and all the figures are expressed as percentage of the total. Similarly, in a Profit & Loss Account, sales figure is assumed to be equal to 100 and all other figures are expressed as percentage of the total. The statements so prepared are called Common Size Statements.

A lot of information can be obtained from an examination of Balance sheets instead of examining a single Balance Sheet.

The value of information obtained from an examination of series of Balance Sheets lies in the fact that the following useful conclusions can be made

*Analysis of financial
statements accounts
ratios*

NOTES

1. If the share of loan capital is frequently increased without a corresponding increase in turnover, a weak financial position is indicated.
2. If bank loans are retained for considerable periods, it is indicated that revenue earning capacity of the company is inadequate to justify an increase of share capital.
3. If profits are comparatively stable over a period of years, it is indicated that profit shall not fluctuate provided normal conditions are maintained.
4. If dividends are maintained and regular transfers are made to reserves and the working capital remains stable, steady and satisfactory progress is evident.
5. If profits are gradually increased without a corresponding increase in floating assets, greater productive efficiency and improved selling prices are indicated.
6. If profits are gradually increased with a corresponding increase in debtors, stocks etc., an increased turnover is indicated.
7. If fixed assets are increasing in value without a corresponding increase in profits, inadequate provision for depreciation and over-valuation of fixed assets are indicated.
8. If creditors are gradually exceeding debtors without a corresponding increase in stock, over-trading is indicated where profits are maintained; whereas a possibility of compulsory liquidation is indicated where profits are non-existent.

The above examples of the more usual conclusions cannot be applied without modification to every individual concern, because consideration must be given to any circumstances peculiar to the business under review.

Diagnosing Financial Trouble

The chief financial troubles that a business might meet are failure to make a profit, running out of money etc.

1. Failure to make a Profit

Profit is mainly the excess of sales over expenditure. A failure to make a profit may be due to something having gone wrong with either one or the other.

The trouble with sales may not be that sale prices are too low; but rather that good selling lines are unprofitable, while other lines have priced themselves out of the market because the profit margin on them is higher than what is necessary.

The trouble with expenditure may not always be that it is too high; it may be that the total level of expenditure is about right but that money is being spent on the wrong things.

2. Running of Money

Making profit is not everything. There have been many business concerns which, despite excellent profit records, have had to suffer a financial crunch in their business. For example, all their money was locked up in stock which they could not realise, and so they were unable to pay their creditors in time. It is amply said that stocks are the graveyard of business.

Control of stocks and work-in-progress is a matter of sound production control combined with proper control of materials, through quantity records.

The amount of profit earned by the capital employed in the business can be increased by rate at which the stock is turned over.

When it does not, keep its bank balance under control, the inevitable result will be that a business will find itself without sufficient funds to meet the demands of creditors. So long as cash, coming in from customers, runs level with the demands on the business by suppliers and workers, then all is well. But a serious shortage of working capital can rapidly develop when demands steadily exceed supplies of cash.

The normal flow of receipts from customers can be assessed together with any anticipated receipts on capital account and from other sources. The difference between the anticipated receipts and outgoings gives the running bank balance month by month. From this, one can build up a forecast for the coming months of the probable drawings on the bank. If it is seen from this calculation that there is going to be a temporary shortage of working capital

at any period, then there is plenty of time to take the necessary steps to provide funds.

If it is seen that funds are going to be consistently short, then action must be taken to correct the position. Such action may be

1. To press the customers to pay their debts promptly by allowing additional cash discount, if necessary.

2. To shorten the terms of credit given to the customers..

3. To reduce the level of stocks carried.

4. To arrange for an extended overdraft facilities from the bank when the position is considered to be only temporary.

5. To arrange for a further supply of permanent capital.

In the bustle of getting more and more business, the problem of supplies of available working capital passes unnoticed.

3. Over - Trading

Over-trading is the result of accepting excessive orders. The decision of accepting excessive orders compels the management to make more credit purchases engage more workers and make overtime payment to the workers engaged in order to fulfil the commitments. The necessity of cash increases in order to make payments to trade creditors from whom purchases have been made much more than the usual demand in order to fulfil commitments. On the other hand, realisation of cash is delayed because of long time taken in converting raw materials into finished products and then ultimately selling them away in the market. It means that the concern has assumed heavy orders, commitments and responsibilities beyond its overall means. A situation like this is known as over trading.

The business is caught in the trap. It is faced with the need of borrowings at high rates of interest or failure to deliver goods according to schedule against the fresh order and thereby lose the goodwill and status which may have serious impacts on the concern's future. The symptoms of over-trading are

1. Piling up of stock.

2. Increasing trend of total creditors.

3. More than the normal credit period allowed indicates an index of poor cash position and consequently over trading.

4. When sales are too high in comparison with working capital.
5. When sales are too high in relation to capital.
6. Lack of funds and borrowings at high rates of interest.
7. Reduction in turnover and delay in execution of orders resulting in loss of goodwill.

Apart from the above obvious symptoms of over-trading which have the general effect of weakening the morale of workers and staff, it leads to cutting down all valuable activities such as training, research, developments, modernisation etc. This will seriously affect the long term efficiency, stability and growth potential of the concern. Over-trading, thus, is harmful to the prospects and profitability of a business enterprise.

4. Under-Trading

Under - trading is a condition of just the reverse of overtrading. It indicates, generally the inadequate volume of business. This is due to underemployment of assets of the business leading to fall of sales and results in financial crisis. This makes the business unable to meet its commitment. Ultimately, this leads to forced liquidation.

5. Under - Capitalisation

When the owned capital (both equity and preference capital) of the business is much less than the borrowed capital which includes trade creditors also, then it is a sign of under-capitalisation. This means that the business is depending upon borrowed money and trade creditors. It may be the result of over-trading. It results in the payment of excessive interest on borrowed capital, use of out-of date equipments because of the inability to buy new ones and high cost of production, because of the use of old machines and high cost of purchase of extra-credit demanded on purchases etc.

6. Over-Capitalisation

A concern is said to be over-capitalised, if its earnings are not sufficient to justify, a fair return on the amount of share capital and debentures that have been issued. When total of owned and borrowed capital exceeds its fixed and current assets, it is said to be over-capitalised. That is, it will show accumulated losses on the assets side.

7. Capital Gearing

If a company collects capital by issuing debentures, preference shares or by inviting public debts which bear a fixed rate of interest the company is said to have 'geared' the capital. Capital Gearing is the relationship between Equity Capital (including reserves & undistributed profits) on the one hand and the Debentures and Preference Shares on the other.

Gearing is said to be high, if capital carrying fixed rate of income is more than equity capital.

Gearing is said to be low, if capital carrying fixed rate of income is less than the equity capital.

In business where the prospects of the future profits are still not very clear or which are comparatively new, then high gearing is not good. Because, the business cannot afford to plan fixed amount of interest with uncertain income. High gearing may be better if the business can foresee with certainty the profits to be made in the future and can be sure of minimum amount of profits. Because, this leaves more amount of profit for the equity shareholders and also for ploughing back of profits.

8. Earning Capacity

The trend of profits made by a company during the current year and in the past years is known as its earning capacity. The progress of a company is judged by its earning capacity. It is necessary to study the Profit & Loss A/c for the purpose.

A comparative study of the Profit & Loss A/c for a few years will disclose the following information.

1. The amount of the profits and the trend there of i.e., whether progressive, regressive or stationary.
2. Wide fluctuations would point to the business being of a speculative nature.
3. The percentage of the Profits on the capital employed in the business can be, compared with the percentage earned by other business concerns in the same industry.
4. The provision made for the depreciation on fixed assets i.e. whether such provision appears to be adequate having regard to the balance sheet value of such assets.

5. The amounts and rates of dividend paid on the share capital.
6. The profits allocated to reserve and carried forward, and whether they indicate the pursuit of the prudent policy on the profits of management.

Illustration: 4

Y LTD

Income statement for the years ended 31st December 2001, 2002 & 2003

	2001	2002	2003
	Rs.	Rs.	Rs.
Net sales	32,00,000	22,00,000	14,00,000
Cost of Good sold	22,72,000	15,18,000	10,22,000
Gross Margin	9,28,000	6,82,000	3,78,000
Operating expenses	6,08,000	3,96,000	2,24,000
Net operating income	3,20,000	2,86,000	1,54,000
Interest expenses	32,000	17,600	1,400
Net income before income	2,88,000	2,68,400	1,52,600
Tax	1,28,000	1,14,400	68,600
Provision for taxes	1,60,000	1,54,000	84,000

Prepare a Common Size Statement and make brief comments.

Solution :

Y LTD.

Income statement for the years ended 31st December

	2001	2002	2003
	%	%	%
Net Sales	100	100	100
Cost of Good sold	71	69	73
Gross Margin	29	31	27
Operating Expenses	19	18	16
Net operating income	10	13	11
Interest Expenses	1	0.8	
Net income before income tax	9	12.2	
Provision for taxes	4	5.2	
	5	7	

Comment

The absolute figures in rupees show that Sales, Cost of Goods sold and Gross Profit all have continuously increased since 2002. But Common Size Statement reveals that Cost of Goods sold in relation to sales decreased in 2003 and again increased in 2004. Consequently, rate of Gross Profit in 2003 over 2002 increased but in 2004 over 2003 decreased. Similarly, Net Profit after tax in absolute figures show increasing trend since 2002 but the rate of Net Profit on sales in 2004 is 5% in contrast to 7% in 2003 and 6%0 in 2002.

*Analysis of financial
statements accounts
ratios*

NOTES

Illustration: 5

COMPARATIVE BALANCE SHEET OF COMPANY LTD

As at 31st December

Current Assets & Current Liabilities only

(in thousands of Rupees)

	2003	2002	Increase or Decrease	
			Amount	%
CURRENT ASSETS	Rs.	Rs.	Rs.	Rs.
Cash & Bank Balance	4,111	9,718	-5,607	-57.7
Investment	103	103
Sundry Debtors	8,127	11,080	-2,953	-26.6
Inventory	66,136	43,394	+22,742	+52.4
Stores & Spare parts	4,257	3,745	+512	+13.6
Tools	73	75	-2	-2.6
Prepaid Expenses	3,540	3,660	-120	-3.3
Deposits with Govt	2,383	2,752	-369	-13.1
	88,730	74,527	+14,203	+19.0
Less: Provision for Doubtful				
Debtss	63	52	+11	21.1
Total Current Assets	88,667	74,475	+14,192	+19.0
CURRENT LIABILITIES				
Bank Overdraft	6,334	1,387	+4,947	+356.6
Creditors	17,860	17,355	+505	+2.9
Provision for taxation	12,772	8,084	+4,688	+57.9
Unclaimed Dividend	47	+47

Proposed dividend	7,798	4,177	+3,621	+86.6
Total current liabilities	44,811	31,003	13,808	44.5

1. Cash/Bank Balance :

They decreased by 57.7 per cent. This fall in cash and bank balance resulted largely from the higher stocks of raw materials and finished goods held at the end of 2002.

2. Investment : No change.

3. Sundry Debtors :

There is a decrease of Rs. 26,53,000 in this case. What its significant is the fact that there is an increase in provision for doubtful debts. It may be due to an increase in sundry debtors which might be more than, say, three months old and needs caution on the part of the management.

4. Inventory :

The increase of inventories represents Rs. 2,27,42,000 being 52.4 percent, the inventory increase is too much during the year 2003. Moreover, the inventory was 159.4 percent of the working capital an unbalanced condition. From sound financial point of view the inventory should not exceed the working capital.

Current Assets increased by 6%. The increase is the sum of the net differences in items that go to make UP the current assets.

5. Bank Overdraft :

The bank overdraft increased by Rs. 49,47,000. The net balance in the beginning of the year 2002 was about Rs. 83 lakhs (Rs. 97,18,800 -Rs. 13,88,000) and the net borrowings at the end of the year about Rs. 22 lakhs (Rs. 63,34,000 -41,11,000). This fall in resources by Rs. 105 lakhs resulted largely from the higher stocks of raw-materials and finished goods held at the end of 2002.

6. Creditors :

Creditors increased by 2.9%. Both the amounts due to bank and the creditors would normally expand along with increase in the inventory. This increase in creditors, however, was moderate because of rather substantial increase in bank overdraft.

7. Provision for Taxation :

The provision for taxation increased by Rs. 46,88,000. It may be due to changes in the budget taxation measures.

NOTES

A heavy increase in the bank overdraft portrays that net working capital may be inadequate.

Trend Analysis

It is necessary to have statements for a number of years for the trend of data shown in the financial statements. It involves the percentage relationship that each statement item bears to the year. Trend percentages disclose changes in the financial and operating data between specific periods and make it possible for the analysis to form an opinion as to whether favourable or unfavourable tendencies are reflected by the data.

Trend percentages are calculated only for some important items which can be logically connected with each other. They become uncomparable if accounting practices have not been consistently followed year after year. They must not be read without considering the absolute data on which they are based. For example the trend percentage may reflect 100% increase in two expenses. One expense might have increased from Rs. 100 to 200 and another from Rs. 10,000 to Rs. 20,000. The increase in the first case is insignificant while in the latter it is significant if one considers the actual figures also. Further, a change in price level makes comparison out of tune. When prices in 1998 have increased by 75%, over the prices of 2003 then increase in sales by 50% will give a misleading picture.

Illustration: 6

From the following balance sheets of Goyal Co., Ltd., you are required to calculate trend percentages using December 2001 as the base year (100%)

- 1. Accounts Receivables
- 2. Current Assets
- 3. Total Non-Current Assets
- 4. Current Liabilities and 5. Capital

NOTES

LIABILITIES & CAPITAL (in Rs. 1,000)				ASSETS (in Rs.1,000)			
	2003	2002	2001		2003	2002	2001
Accounts payable	80	90	70	Cash	24	18	14
Accrued expenses	18	15	9	Accounts Receivable	120	130	128
Taxes payable	32	20	31	Inventory	46	32	38
Total current liabilities	130	125	110	Total current assets	190	180	180
Share capital	110	100	100	Fixed assets net of depreciation in	102	85	60
Retained Earnings	60	45	40	Other non current assets	8	5	10
Total capital	170	145	140	Total non current assets	110	90	70
Total liabilities & capital	300	270	250	Total current and non current assets	300	270	250

Solution :

WORKINGS

BASE YEAR 2001

Analysis of financial
statements accounts
ratios

NOTES

Assets - Receivable	$\frac{130}{128} \times 100 = 101.5$
	$\frac{120}{128} \times 100 = 93.7$
Current Assets	$\frac{180}{180} \times 100 = 100$
	$\frac{190}{180} \times 100 = 105.5$
Non-Current Assets	$\frac{90}{70} \times 100 = 128.5$
	$\frac{110}{70} \times 100 = 157.1$
Liabilities-Current	$\frac{125}{110} \times 100 = 113.6$
	$\frac{130}{110} \times 100 = 118.2$
Capital	$\frac{145}{140} \times 100 = 103.5$
	$\frac{170}{140} \times 100 = 121.4$

ASSETS	DECEMBER			TREND PERCENTAGES BASE DATE : 31ST DEC 1988		
	2001	2002	2003	2001	2002	2003
	Rs.	Rs.	Rs.	%	%	%
Receivable	128	130	120	100	102	94
Current Assets						
(Total)	180	180	190	100	100	106
Non-Current Assets						
(Total)	70	90	110	100	129	157

Illustration : 7

Prepare a common size Balance sheet for the three years to the nearest tenth of one percent from illustration No. 6

Liability - (Total Capital & Liabilities to each item)

2001

$$\frac{28}{100} \times 100 = 28.0$$

$$\frac{9}{250} \times 100 = 3.6$$

$$\frac{31}{250} \times 100 = 12.4$$

$$\frac{100}{250} \times 100 = 40.0$$

$$\frac{40}{250} \times 100 = \frac{16.0}{100}$$

Assets - (Total current & Non current assets to each item)

2001

$$\frac{14}{250} \times 100 = 5.6$$

$$\frac{128}{250} \times 100 = 51.2$$

$$\frac{38}{250} \times 100 = 15$$

$$\frac{60}{250} \times 100 = 24.0$$

$$\frac{10}{250} \times 100 = \frac{4.0}{100}$$

Solution:

COMMON SIZE

BALANCE SHEET OF GOYAL CO. LTD.

As at 31st December 2001 – 2003

LIABILITIES				ASSETS			
	2003 %	2002 %	2001 %		2003 %	2002 %	2001 %
Accounts Payable	26.7	33.3	28.0	Cash	8.0	6.7	5.6
Accrued Expense	6.0	5.6	3.6	Accounts Receivable	40.0	48.1	51.2
Taxes Payable	10.7	7.4	12.4	Inventories	15.3	11.9	15.2
Total Current Liabilities	43.4	46.3	44.0	Total Current Assets	63.3	66.7	72.0
Share Capital	36.6	37.0	40.0	Fixed Assets (net of depreciation)	34.0	31.4	24.0
Retained Earnings	20.0	16.7	16.0	Other Non-current Assets	2.7	1.9	4.0
Total Liabilities and Capital	56.6	53.7	56.0	Total current and non-current Assets	36.7	33.3	28.0
	100	100	100		100	100	100

Nature of Financial Statements

*Analysis of financial
statements accounts
ratios*

NOTES

Financial Statements are prepared for the purpose of presenting a periodical report on the progress to the management and deal with the status of the investments in the business and results achieved during the period under review.

The data exhibited in these financial statements are the results of ;the combined effect of

- (a) Recorded Facts
- (b) Accounting Conventions and
- (c) Personal Judgements

By recorded facts, we mean figures relating to Cash, Bank, Debtors, Purchases, Wages, Salaries etc., that are drawn from the accounting records. These statements do not disclose such facts which are not and cannot be reco.rded in the accounting books whether or not such facts are material. For example, the replacement value to the market value of a fixed asset is not stated in the balance sheet because as per the accounting records the cost price of the fixed asset is a recorded fact. Hence, the Balance Sheet does not show the financial position of the business in terms of current economic conditions because most of the items which it exhibits are shown as historical costs rather than current costs. Some facts, such as contingent liabilities valuation method applied to stock investments etc., cannot be recorded in the books but are shown as foot notes.

The financial statements are affected by accounting conventions and concepts. Because of the influence of the going concern concept market values of the assets are ignored. Due to the convention of conservatism the estimate of loss on account of bad debts is resorted to. Further the purchasing power of the rupee is treated as constant whereas it is not.

The application of the accounts, conventions and concepts depends on the personal judgement of the accountant. He has to decide whether the asset is to be depreciated on straight line method, written down value” method or some other method. The same is the case while selecting FIFO or LIFO for valuing stock-in trade. Judgement is also exercised when the accountant writes off intangible assets say, over a period of five years rather

than shorter or longer period. However, the existence of consistency principle serves as a check on the power of the accountant to use his personal judgement.

Limitations of Financial Statements

Financial Statement gives the impression that they are precise, exact and final. In fact, these statements have certain limitations;

The profit reported and financial position cannot be exact that these are interim reports. Exact position can be known only when the business is liquidated or sold. The Balance Sheet does not show the financial position of the concern as is claimed by it due to various accounting concepts and conventions. The same thing is true in the case of net income also. Many items are influenced by the personal judgement.

Financial Statements do not make a full disclosure of all materiel information. It is true that the Companies Act requires that certain information must be invariably disclosed such as the mode of valuation of inventory, the original cost of fixed assets along with addition and sales during the year, depreciation provided and the net book value. Such requirements are only minimal. The management has wide discretion as to the extent of disclosure that they will make. For example, there is no responsibility cost on the management to report on the result of operation by products divisions and other segments of activity. Administrative and selling expenses are invariably mixed in this respects.

Thus, the financial statements show the position of financial accounting rather than the financial condition of a business.

2.3 ACCOUNTING RATIOS

As a student of Accountancy, you are well aware of the methods of recording business transactions in the books of accounts and the ultimate compilation there from of a Profit and Loss Account and a Balance Sheet. It is now proposed to examine the art of interpretation of accounts. The figures are visible to all but it requires skill and judgement to unveil their inner meaning and relative importance.

The purpose of this topic and the next one is to examine the more important tool of financial analysis viz. Ratio Analysis. We shall see how

business concerns measure their profitability and turnover as well as their liquidity and leverage with the help of these ratios.

A business concern's performance can be measured by the use of ratios. Ratios involving figures from the Profit and Loss Account, the Balance Sheet, or both, may reveal much about a company's financial position to its management, shareholders and creditors.

The accounting data will be read by the following interested classes:

- | | |
|---------------------------|----------------------------------|
| 1. Owners or Shareholders | 4. Financial Journalists |
| 2. Creditors | 5. Financial Analysts |
| 3. Investors | 6. Investigators or Researchers. |

In the case of limited companies, most of the people who will read the accounting data have one thing in common, that is, they are not intimately connected in any way with the day-to-day running of the company. It is, therefore, essential [to assess position of the business concern to know how to read the accounts properly and to extract the maximum information from them.

The principles to be examined by the interpreter are illustrated by a „et of questions:

1. Profitability

Are the profits adequate for the capital employed? Could a better return be made? Is the capital employed in the right way and in the right place?

2. Solvency

Can the concern repay its creditors? Is it over-trading? Can its profitable operations be halted by a shortage of working capital?

3. Ownership

How is the ownership divided between the Equity Shareholders and Preference Shareholders? What extent of the business is financed by its creditors?

4. Financial Strength

Has it got sufficient resources to enable it to expand. Does it retain a part of Profits to increase the reserves?

5. Trend

Are the profits on a rising scale or falling away?

6. Gearing

How certain are dividends? What effect will a given fluctuation of profit have on the ability of the company either to meet its liability for interest on loan capital or to recommend a dividend?

Each of the classes of persons reading and interpreting the accounts will place a different emphasis on each of the six questions. The technique, that is used by accountants to facilitate the discussion of the questions listed above is Ratio Analysis. The technique of analysing and interpreting financial statements of companies is highly developed in the U.S.A. The presentation of an-elaborate system of Ratio Analysis was made by Alexander Wail. Since then, comprehensive analysis by means of calculation of a series of ratios rapidly became 'all the rage'.

What they are:

Ratios may be expressed in different ways:

1. In some cases, they are stated as pure ratios e.g., 2: 1 (Current assets are double the value of current liabilities)
2. In others, they are expressed as so many times e.g, stock turnover being 6 times a year.
3. In yet others, they are expressed as Percentages e.g., 30% Gross Profit on Sales.

A ratio is simply the quotient of two numbers. By itself, it is almost meaningless. For an accounting ratio to have meaning, it must be interpreted against some standard. ratios for the same company. The second method of comparison involves comparing the ratios of one company with those of similar companies at the same point of time.

Why they are:

The need for these ratios arises due to the fact that absolute figures are often misleading. Absolute figures are certainly valuable but their value increases manifold if they are studied with another through ratio analysis. Ratios enable the mass of data to be summarised and simplified for presentation to management for studying trends and making comparative assessment of performance and stability of business.

To illustrate it: - if somebody says that Sales have been increased from Rs. 5 lakhs to Rs.51/2 lakhs, it may not be as favourable as it appears as

the same might have been on account of disproportionate rise in expenses or due to increase in selling price. So, an overall appraisal of the company business is very much dependent upon the different accounting ratios drawn on the basis of various records.

Ratio Analysis is an instrument for diagnosis of the financial health of an enterprise. Thus, it does by evaluating important aspects of the conduct of business like liquidity, solvency, profitability capital gearing etc. It can be of invaluable aid to management in the discharge of its basic functions of forecasting planning, co-ordination, communication and control. By an analytical study of the past performance of the business, it helps in predicting the future.

Uses of Accounting Ratios

By themselves, accounting ratios are fairly meaningless. The usefulness of the ratios depends upon the ingenuity and experience of the analyst who employs them. They must be analysed on a comparative basis. The comparison is historical, if we compare ratios of the same company over a period of time for evaluating the company's financial condition and profitability. This is known as "time series analysis". It may also include an analysis of the future based on projected financial statements. It may be judged in comparison, with those of similar companies in the same line of business and with an industry -average. This is known as "cross sectional analysis"

If properly used, Ratios can improve efficiency and therefore profits. In the wrong hands they may mislead and result in wrong conclusions being reached. Some of the possible uses of accounting ratios are summarised below.

1. Past ratios indicate trends in costs, sales, profits, and other relevant facts. For forecasting likely events, they may be very useful.
2. By accounting ratios, the plans can be made 'signposts' or guidelines.
3. To establish the desirable co-ordination they may be used.
4. Control of performances (e.g. sales quotas) as well as control of costs may be materially assisted by the use of ratios.

5. Ratios may be used as measures of efficiency for inter-firm and intra-firm comparison.

6. Ratios can play a vital role in informing what has happened.

If properly selected, correctly calculated, and timely presented, accounting ratios often prove very handy and useful tools for helping the management to have a clear grasp of the business resulting from the policy followed so far.

The above is a brief outline of possible uses of accounting ratios. Additional purposes will become apparent from the description of the ratios given later in this lesson.

Limitations

Ratio analysis has a few pitfalls:

1. Ratios are calculated from the data drawn from accounting records. As such, it suffers from the inherent weakness of the accounting system itself which is the source of data.

2. Ratios compared from single set of figures will not have much significance. They must be compared with independent standards. But, ratios share with other statistical concepts all the limitations of the latter in the determination of a proper standard for comparison.

3. Ratios are clues, not bases for immediate conclusions. They are only the means to reach conclusions and not conclusions in themselves. They give just a fraction of information needed for decision making.

4. Conclusions from analysis of statements are not sure indicators of bad or good management. They give room to suspicion and should be carefully looked into. For example, a high inventory turnover, generally considered to be an indication of operating efficiency, may be temporarily achieved, by unwarranted price reductions or failure to maintain stock-in-hand.

5. As ratios are simple to calculate and easy to understand, there is a tendency to employ them profusely. When too many ratios are calculated, they are likely to confuse instead of revealing meaningful conclusions.

6. Different agencies adopt different definitions thereby making the ratios non-comparable. Thus, Ratio Analysis has a few limitations. Ratios themselves cannot provide answers to management or investors; but they do

highlight trends and allow comparisons to be made and when applied intelligently they can be a valuable tool.

Classifications of Ratios

Many types of accounting ratios may be used.

Some Ratios may draw information from Profit and Loss Account; other ratios may draw information from Balance Sheet; still some other ratios may draw information from both the Profit & Loss Account and the Balance Sheet.

The Accounting Ratios may be classified either according to

- ACCOUNTING RATIOS**
- **Balance Sheet Ratios**
 - **Profit & Loss Ratios**
 - **Composite Ratios**

- (i) Structural point of view or
- (ii) Functional point of view

1) The Accounting Ratios under structural point of view:

1. Balance Sheet Ratios : (Also known as Financial Ratios)

A ratio may be between two Balance Sheet items. Such a ratio may be called a 'financial Ratio' or 'Balance Sheet Ratio'.

- (i) Current Ratio
- (ii) Quick Ratio or Liquid Ratio or Acid Test Ratio
- (iii) Proprietary Ratio
- (iv) Assets Proprietorship Ratio

2. Profit and Loss A/C Ratios

A ratio may be between two items of the Profit and Loss Account. Such a ratio may be called an 'Operating Ratio' or 'Profit & Loss A/c Ratio'.

1. Gross Profit Ratio
2. Net Profit Ratio
3. Expense Ratios
4. Operating Ratio
5. Stock Turnover Ratio

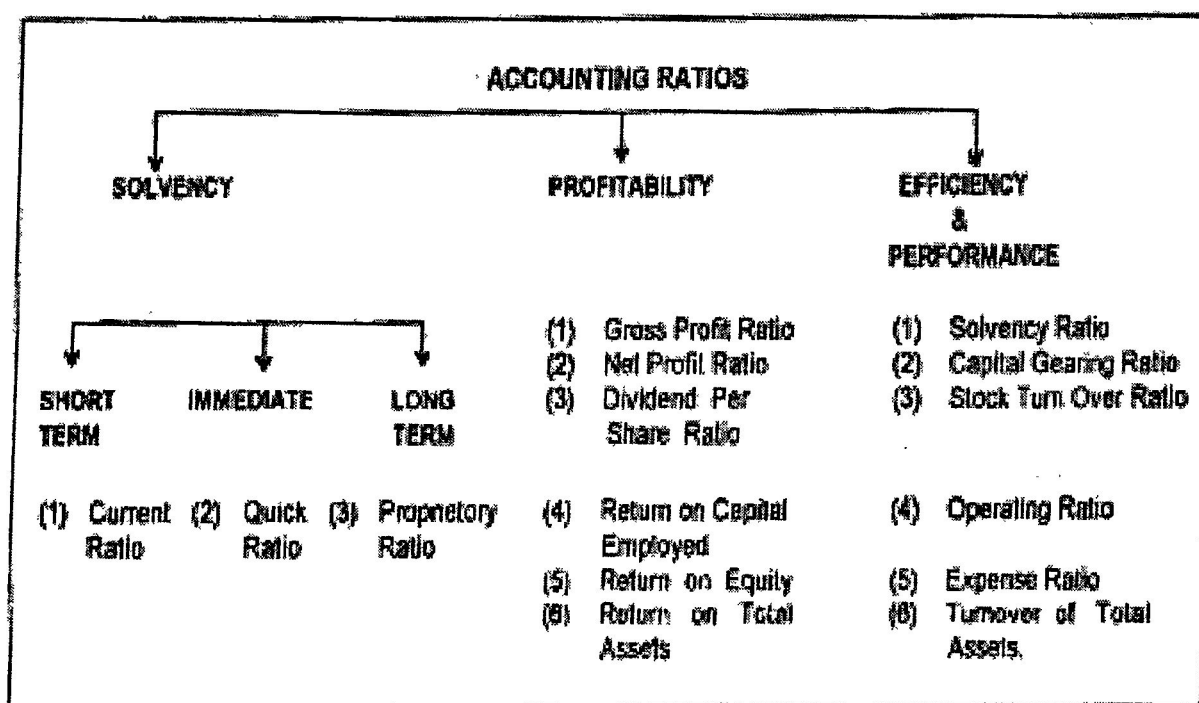
3. Composite Ratios

If a ratio is between a Balance Sheet item and Profit and Loss Account item, such a ratio may be called a 'Composite ratio'.

- (i) Returns on Proprietors' Fund

- (ii) Returns on proprietors' Equity
- (iii) Return on Equity share Capital
- (iv) Return on Capital Employed,
- (v) Return on Total Assets
- (vi) Turnover on fixed Assets
- (vii) Turnover of Total Assets
- (viii) Turnover of Working Capital
- (ix) Debtors' Turnover
- (x) Creditors' Velocity

2. The accounting ratios from functional point of view:



Solvency Ratios test the normal, immediate and future solvency of the business by means of Current, Quick, and Proprietary ratios respectively. Solvency refers to the ability of the business to meet its outside liabilities as and when they fall due.

Profitability Ratios test the over-all profitability of the business. Any material increase or decrease in these ratios should be carefully looked into.

1. Current Ratio

Meaning :

Of all analytical devices based on the Balance Sheet, Current Ratio is the most widely used. It compares current assets with current liabilities.

Alternative Name :

Current Ratio is otherwise known as Working Capital Ratio. It is also known as 2 is to 1 Ratio.

Current Ratio consists of current assets divided by current liabilities. It is calculated as

Components :

‘Current Assets’ mean assets which can be converted into cash within a year’s time. Current Assets normally include Cash in hand, Cash at Bank, Marketable Securities, Short-term high quality Investments, Bills Receivable, Sundry Debtors, Inventories and Prepaid Expenses.

‘Current liabilities mean liabilities repayable in a year’s time. Current Liabilities are composed of Outstanding and Accrued Expenses, Sundry Creditors, Bills payable, Provision for taxation etc. Some authorities do not include Bank Overdraft in current liability on the ground that the arrangements with the bank regarding the bank overdraft is ‘permanent’. In spite of the fact that this sort of argument has a substantial degree of truth, the fact remains that this facility can be called off by the bank at any time and In keeping with convention of conservatism, the inclusion of Bank Overdraft in current liability seems to be reasonable.

Purpose :

It serves two purposes
as an index of solvency and
as an index of the strength of working capital.

Hence, this ratio is of primary importance to the short-term creditors. The purpose is to test the normal solvency of the business.

Interpretation :

Suppose, the total current assets amount to Rs. 20 lakhs and the total current liabilities are worth Rs. 10 lakhs. The current ratio is

2:1

This measures the company’s ability to meet its short-term obligations. Here current ratio is reasonably good because current assets are almost double the current liabilities.

For this, standard ratio is 2 : 1. A ratio of 2 : 1 is desirable because, it indicates that current assets are twice the value of current liabilities. At one time 2:1 was considered ideal. But in actual practice, 1 : 1 ratio is found suitable than 2: 1. High ratio, say 3: 1 and so on may be due to poor investment policies, excessive stock etc. Similarly a low ratio, say, 0.5 : 1 may indicate a shortage of working capital. In other words, high ratios indicate not only under-trading but also a sign of over-capitalisation. Conversely, low ratios indicate a over-trading as well show a sign of under-capitalisation of business.

This ratio varies from industry to industry and within industry from company to company and within the same company from season to season.

Window Dressing :

It may be noted that Current Ratio is susceptible to 'Window dressing'. Window dressing is an artificial practice to show current ratio position favourably. That is to say.

current ratio, after the process of window dressing, does not show the real current financial position.

Window dressing may be done in the following ways:

- (i) Manipulating the value of inventory;
- (ii) Treating borrowed capital as being long-term capital;
- (iii) Recording in advance in the current year the cash receipt of the next year;
- (iv) Deferring purchases;
- (v) Extensive drive in the collection of book debts in order to keep the bank balance in a favourable footing etc.

Let us show you the mechanism. Originally the current ratio is

2: 1 i.e. If the needed credit purchase of stock for Rs. 6 lakhs were not possible to defer (i.e., after purchasing goods worth Rs. 6 lakhs on credit basis) the position of current ratio would have been like this:

Thus, an equal increase in both current assets and current liabilities would decrease current ratio Similarly, an equal decrease in current assets and current liabilities would increase current ratio.

The greater the current ratio, the greater the relative amount of working capital and the greater is the assurance that the company will have sufficient funds to meet its current liabilities as they fall due for payment and the cost of carrying on its current operations. However, the current ratio must be regarded as a crude measure of liquidity, because it does not take into account the liquidity of the individual components of the current assets. For example, a company having current assets composed principally of cash and accounts receivable is generally regarded as more liquid than a company where current assets consist of primarily inventories. A ratio of more than one indicates liquid surplus. Nevertheless, this does not mean that the company has sufficient cash to pay off short-term obligations as and when they fall due. Even if the ratio is favourable, the company might have more stock and work-in-progress and less cash to meet the demands of the creditors. It is, therefore, dangerous to use current ratio alone as a sole index of solvency. Consequently we must turn to 'finer' tools of analysis, if we are to evaluate critically the liquidity of the company. Perhaps, current ratio should always be supported by additional analysis in determining liquidity of the business.

2. Acid Test Ratio

Meaning :

Acid Test Ratio gives a somewhat more accurate guide to liquidity. It brings a relationship between liquid assets and liquid liabilities.

Alternative Name :

Acid Test Ratio is otherwise known as Liquid Ratio. It is also known as Quick Ratio.

Acid Test Ratio is concerned with the relationship between liquid assets and liquid liabilities. It consists of liquid assets divided by liquid liabilities.

It is worked out as

Components :

Liquid Assets = Current Assets - Inventories

Liquid Liabilities = Current Liabilities - Bank O/D

Liquid assets would include Cash, Debtors and Bills Receivable and Temporary Investments which can be realised without difficulty. Liquid Assets refer to current assets less inventories. Prepaid Expense is also excluded from the list of liquid assets because they are not expected to be converted into cash. Liquid liabilities refer to current liabilities less Bank overdraft i.e. Outstanding Creditors and Accrued Expenses, Sundry Creditors and Bills Payable.

Purpose :

The purpose of Acid Test Ratio is to test the immediate solvency of the business.

Interpretation :

Suppose, the total quick assets of a company is Rs.,141 lakhs and total quick liabilities amounted to Rs. 12 lakhs.

$$\text{Acid Test Ratio} = 14:12 = 1.1 : 1$$

The standard ratio is 1: 1. If acid test ratio is 1.1 ∴,1., then the position is satisfactory. Here, it means that for every Re. 1 worth of liquid liabilities, there are liquid assets worth of Rs. 1.10 .

We have already seen that the current ratio includes an asset which requires the company's operations to continue in order to convert into cash. This asset is 'Inventories'. The acid test ratio, removes this least liquid of current assets (viz.) inventories, to indicate how liquid the company would be, if operations were to halt abruptly. Since only cash and quick selling assets are included in the list of liquid assets, the danger of loss on realisation of assets is less. This is because stocks are less liquid and are also subject to wide market fluctuations.

This ratio helps us to study the immediate cash position of a company. It is a supplementary measure of liquidity and places more emphasis on immediate conversion of assets into cash than does the current ratio. It is a more rigorous test of liquidity than the current ratio. When used with current -ratio, it gives a better picture of the company's ability to meet its short-term liabilities out of short term assets.

Like current ratio, a reasonable standard for the acid test ratio varies from season to season in a company and from company to company in an industry. For example, a seasonal business which seeks to stabilise production, will tend to have a weak acid test ratio during its period of slack sales, but probably a powerful one in its period of heavy selling, so that the earlier weak position would have to be judged in relation to the market prospects for the company's product in the later period.

This ratio is an improvement over the current ratio.

It is useful for banks and financial institutions. In the case of manufacturing concerns, this ratio may fall in times of prosperity, because increased activity may lead to larger stocks and less cash. Conversely, when trade is slowing down, the reverse will happen and the ratio will rise.

3. Proprietary Ratio

Meaning :

It is the ratio of total proprietors fund to the total assets employed in the business. It indicates how much of the total assets are owned by the proprietors and how much is available for creditors.

Alternative Name :

It is otherwise known as Worth -Debt Ratio.

Proprietary Ratio relates 'Funds belonging to proprietors to the 'Total assets of the company.

It is calculated as =
$$\frac{\text{Proprietors Funds}}{\text{Total Assets}}$$

This ratio may be calculated by another formula i.e.,
$$\frac{\text{Proprietors Funds}}{\text{Total Equities}}$$

Here, the total equities mean the total liabilities which are equal to total assets.

Components :

The term Proprietors' Funds or Funds belonging to Proprietors means not only Equity Capital but also Preference Capital plus General Reserve and Profit and Loss A/c (or, Balance). Total assets include Goodwill, Some authors exclude Goodwill while computing the total assets. (Students are

advised to indicate in their answers whether they have included or excluded Goodwill while calculating total assets).

Purpose :

The Proprietary Ratio indicates the long-term or future solvency position of the business.

Interpretation :

If the proprietors' funds are Rs. 40 lakhs and the total assets are Rs. 50 lakhs, the

$$\frac{\text{Proprietary Funds}}{\text{Total Assets}} = \frac{40}{50}$$

Proprietary Ratio is = 0.80:1 Thus, out of every Re. 1 employed in the business, proprietors contribution is Re. 0. 80 whereasthe creditors have contributed the remaining Rs. 0.20. This ratio has come to be regarded as a test of the soundness of the capital structure when this ratio is below what is normal in the industry in which the company is engaged, the company's condition may be criticised as top heavy with debt in some financial circles, this ratio is computed without including Preference Share Capital in Proprietors' Funds.

4. Assets - Proprietorship Ratio

Proprietary Ratio is further analysed into the following;

- (i) Ratio of Fixed Assets to Proprietors' Funds and
- (ii) Ratio of Current Assets to Proprietors' Funds

(I) Ratio of Fixed Assets to Proprietor's Funds :

If the business is to be adequately financed in relation to its capital structure, the proprietors should provide the fixed assets and contribute some part of the working capital. The object of this ratio is to find out the extent to which proprietors' funds are sunk into fixed assets with low turnover: When the proprietors' funds are less than the fixed assets, creditors' obligations have been used to finance a part of the fixed assets.

This is calculated by dividing the depreciated book value of the fixed assets by the amount of proprietors' funds. For example, the proprietors' funds are Rs. 49 lakhs and the depreciated value of the fixed assets amounted

to Rs. 30 lakhs, the ratio of fixed assets to proprietors' funds, in terms of percentage

Would work out to $\frac{\text{Fixed Assets}}{\text{Proprietors Fund}} \times 100 = \frac{30}{40} \times 100 = 75\%$

The yardstick for this is 65% for industrial undertaking. If it is more, it would indicate that substantial part of the current assets is obtained with the help of outsiders' funds.

(1) Ratio of Current Assets to Proprietors Funds :

The purpose of this ratio is to indicate the percentage of proprietors funds in current assets. This is obtained by dividing the value of current assets by the amount of proprietors' funds. For instance, the proprietors' funds are Rs. 40 lakhs assets is Rs. 20 lakhs, the ratio of current assets to proprietors' funds in terms of percentage would be

$\frac{20}{40} \times 100 = 50\%$ i.e. $\frac{\text{current assets}}{\text{Current liabilities}}$

Different industries have different standards and history of particular concern must be studied before as a great reliance is placed on this ratio. It must be read along with the results given by the Ratio of Fixed assets to Proprietors Funds.

(II) Ratio of Fixed Assets to current Assets :

The stronger the business, the higher will be its current assets in relation to fixed assets. However, the ratio will vary for different classes of trade. For example, manufacturing companies, have their larger proportions of their funds, invested in fixed assets than a trading company. The ratio will indicate whether or not the company is improving or receding in financial strength. It is worked out as

$\frac{\text{Fixed assets}}{\text{Current assets}}$

Let us assume that a company is having Rs. 30 lakhs worth of fixed assets and Rs. 20 lakhs worth of current assets then the ratio of fixed assets

to current assets would work out $\frac{30}{20} = 1.5 : 1$

Debt Equity Ratio

Meaning :

Debt Equity Ratio relates all recorded creditors claims on assets to the owners.

Alternative Name :

It is also known as External-Internal Equity Ratio.

It measures the company's obligations to creditors in relation to funds provided by the owners. This may be found out by comparing the external equities. It is worked out as

$$(i) \frac{\text{Debt}}{\text{Equity}} \quad \text{or} \quad (ii) \frac{\text{Debt}}{\text{Equity} + \text{Debt}}$$

Note:

The second method is more popular and meaningful. Here Debt refers to external liabilities and equity refers to owned funds.

Components :

Debt includes both long-term and short-term loans in the form of Bills payable, Mortgages, Debentures, Creditors, Outstanding and Accrued Expenses etc. Equity includes Equity Share Capital, Preference Share Capital, Capital Reserve, Retained Earnings and any reserves representing earmarked surplus, like reserve for contingencies, reserve for plant expansion etc. In other words, it is Proprietors' Funds.

Comparison :

A variant of Debt -Equity Ratio is the Proprietary Ratio. The difference between Proprietary Ratio and 100 represents the ratio of Total Liabilities to Total Assets.

Purpose :

The purpose of Debt -Equity Ratio is to have an idea of the amount of capital supplied to the company by the shareholders and of asset 'cushion' available to creditors on liquidation.

Interpretations :

Suppose, the liabilities to third parties i.e., outsiders are Rs. 10 lakh and the proprietors' funds amounted to Rs. 40 lakh then Debt -Equity Ratio would be.

$$\frac{\text{Debt}}{\text{Debt} + \text{Equity}} = \frac{10}{10 + 40} = 10:50 = 1:5 = 0.20$$

*Analysis of financial
statements accounts
ratios*

NOTES

This means that the value of assets could shrink 80 per cent before creditors; prospects of repayment would in anyway be impaired. The interpretation of this ratio depends entirely on the financial and business policy of the company. The shareholders having always the temptation of doing business with other peoples funds and the latter insisting that the shareholders should at least have as large an investment as acceptable. higher the interests of the proprietors as compared with that of the creditors, the sounder would be the financial structure. But this sh'Duld not be treated as a generalisation. On the average, debt-equity ratio o'17 1:1 is acceptable.

6. Capital Gearing Ratio

Meaning :

The term 'Capital Gearing' is used to indicate the proportion between Equity Share Capital on the one hand and Preference Share Capital with other types of fixed interest bearing loans on the other. Gearing of Capital is as helpful and significant for the smooth and successful running of a business as the use of speed gears for an automobile or a machine.

The very relationship between the Equity Share Capital on the one hand and the fixed income bearing securities of a company such as Preference Capital, Debentures, Public Debt etc., on the other indicates whether capital structure is high -geared or low -geared.

Check your progress

1. State True or False

- Bills receivable is a current asset.
- Inventory is a liquid asset.
- Solvency is nothing but the repayment capacity of debtors.
- Bank overdraft is a quick liability.
- Net profit / Sales = Net profit ratio.

It is calculated as
$$\frac{\text{Equity Capital}}{\text{Fixed income bearing securities}}$$

Components :

Equity Capital includes all reserves and undistributed profits as may be regarded as the share of equity shareholders.

Fixed income bearing Securities include Preference Shares, Debentures, Public Debts etc.

Purpose :

Capital Gearing Ratio is by far the most important means for analysis of the Capital structure of a company. It is important not only to prospective investors but also to the company.

Interpretation :

The Equity Share Capital in a company is Rs. 20 lakhs. General Reserve amounts to Rs. 4 lakhs. The Preference share capital is Rs. 8 lakhs and Debentures amount to Rs. 4 lakhs. It is a case of low geared capital structure.

$$\frac{\text{Equity Capital}}{\text{Fixed Income Bearing Securities}} = \frac{24}{12} = 24:12 = 2:1$$

Here, gearing is said to be "low", because capital carrying fixed rate of income is less than equity capital. On the other hand, if the equity capital is Rs. 4 lakhs and reserves amount to Rs. 8 lakhs and Preference share capital and Debentures amount to Rs. 24 lakhs, the gearing is said to be high.

$$\frac{\text{Equity Capital}}{\text{Fixed Income Bearing Securities}} = \frac{12}{24} = 12:24 = 1:2$$

Low Gearing, means high Equity Capital

High Gearing means Low Equity Capital

During times of good profits, shareholders stand to gain with high capital gearing, because the debt capital is paid fixed interest and all the balance of profit is available to the equity shareholders. But in times of low profit, the payment of fixed interest may absorb all the profits, leaving very little for the equity shareholders.

Distribution policies and the building up of reserves, as well as stable dividend policy are all affected by company's 'gearing ratio'. It must be carefully planned in as much as it affects the company's capacity to maintain an even distribution policy during difficult trading periods that may occur.

Whether or not high gearing ratio is good for the company will depend upon the circumstances of case. It will not be good for a Company

whose future profits are still not very clear because with uncertain income the company cannot afford to pay fixed amount of interest every year. It would be better when the company can be sure of some minimum amount of profits because this leaves more amount for the equity shareholders and also for ploughing back.

7. Gross Profit Ratio

It is the ratio of gross profit to net sales. This ratio is invariably expressed as a percentage. Higher the gross profit ratio, the better it is for the company ,

It is calculated as
$$\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

It serves as a guide to the efficiency of the production department. The G.P. ratio should be compared with ratios of previous year and similar business.

The G.P. Ratio has increased say from 20% to 22%. This may be due to rises in selling prices or reduction in cost or both. On the other hand, a fall in the gross profit ratio may indicate unfavourable purchasing and marketing policies or excessive competition. Thus a material increase or decrease in this ratio should be carefully looked into.

There is no norm for judging the gross profit ratio. Therefore, evaluation is a matter of judgement. It should be adequate enough to cover the operating expenses and to provide for fixed charges, dividends and building up of reserves.

A drop in Gross Profit Ratio may be due to the following factors.

1. The cost of purchases may have risen without a corresponding rise in selling prices.
2. Purchases may have been inflated
3. Sales may have been omitted,
4. Selling prices may have fallen without a corresponding fall in the prices of goods purchased and
5. Closing stock may have been undervalued.

Reasons For Increase / Decrease in Gross Profit Fund

1. Variation in the item of sales due to changes in selling prices.

2. Variation in the item of sales due to changes in commodity volume
3. Variation in the item of cost of goods sold due to changes in commodity volume
4. Variation in the item of cost of goods sold due to change in cost.

8. Net Operating Profit Ratio or Margin on Sales

It is the ratio of operating net profit to net sale, Higher the net operating Profit ratio the better it is. It is calculated as

$$\frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$$

Net Operating Profit can be obtained by eliminating the income from non trading assets and non trading expenses from the Net Profit [i.e., Net Operating Profit = Net Profit - Income from non-trading assets + Non-trading Expenses]

Whether profits are satisfactory or not will be disclosed by the Net Operating Profit Ratio. It indicates what portion of sales is left to the owners after all costs, charges and expenses have been deducted. The ratio is widely used as a measure of overall profitability. It is useful to the owners being an indication of Cost Control and Sales Promotion. Interest on Securities, Dividend on Shares Profit on Sale of Shares Fixed Assets etc., are examples of non-operating incomes Provision for Legal suit, Loss on sale of securities etc., represent non-operating expenses. This ratio, in conjunction with operating ratio, throw light on the importance of company's non-operating activities.

By considering both ratios (G.P. Ratio & N.O.P. Ratio), we are able to gain considerable insight into the operations of the company. For example, if the G.P. Ratio is essentially unchanged over a period of several years, but the N.O.P. Ratio has declined over the same period we know that the cause is the higher indirect expenses relative to sales. On the other hand, if the G.P. Ratio falls we know that the cost of producing the goods relative to sales has increased. This occurrence, in turn, may be due to lower prices or to lower operating efficiency in relation to volume. There are any number of combinations of changes possible in the G.P. and N.O.P. Ratios.

If we compare merely the Net Profit to Sales, it will be described as Net Profit Ratio.

9. Expense Ratios

In our analysis it is useful to examine each of the individual expense items as a percentage of sales. By so doing, we can pick out ‘specific areas of deterioration or improvement.

Many cost. or expense ratios exist. Here, Administration Cost or Selling Cost or Volume of Materials Consumed or Factory Cost or Research and Development Cost or Capital Expenditure is compared in relation to Sales (Turnover).

Comparison of these ratios with the corresponding ratios in previous year may afford valuable information as to the direction in which economies ought to be effected.

$$\frac{\text{Administrative Expenses}}{\text{Sales}} \times 100$$

$$\frac{\text{Selling Expenses}}{\text{Sales}} \times 100$$

$$\frac{\text{Financial Expenses}}{\text{Sales}} \times 100$$

$$\frac{\text{Non – operating Expenses}}{\text{Sales}} \times 100$$

$$\frac{\text{Manufacturing Expenses (excluding materials)}}{\text{Sales}} \times 100$$

$$\frac{\text{Materials Consumed}}{\text{Sales}} \times 100$$

10. Operating Ratio

This is obtained by dividing the total of the cost of goods sold plus operating expenses by amount of sales. Lower the ratio the better it is. The ratio is calculated as:

$$\frac{\text{Cost of Goods Sold + Manufacturing Administrative, Selling and Financial Expenses}}{\text{Net Sales}} \times 100$$

A comparison of operating ratio would indicate whether the cost content is high or low in the figure of sales.

A rise in the ratio indicates decline in efficiency. Net Operating Profit Ratio + Operating Ratio = 100

This is the most general measure of operating efficiency and is important to management in judging its operations.

The difference between the operating ratio and 100 is the ratio of operating profit to net sales. The lower the operating ratio the higher the margin of profit while this ratio serves as an index of overall efficiency, its usefulness is limited by its vulnerability to changes resulting from management decisions. For instance a high ratio may signify nothing more than a policy of not providing for necessary maintenance and depreciation. However, it is useful for purposes of internal analysis of deducing the areas of difficulty.

11. Stock Turnover Ratio or Inventory Turnover Ratio

It shows the number of items the stock is turned over during the accounting period. It is the ratio between the average, stock [i.e., Closing Stock + Opening Stock divided by 2] held and the cost of sales [Opening Stock + Purchases - Closing Stock]

For example, the opening stock, purchases and closing stock of a company are Rs. 20,000, Rs. 3,40,000 and 18,000 respectively the Stock turnover ratio is worked out as

$$\frac{\text{Cost of Goods sold}}{\text{Average Stock}} = \frac{\frac{20,000 + 3,40,000 - 18,000}{2}}{\frac{20,000 + 18,000}{2}} = \frac{3,42,000}{19,000} = 18 \text{ times.}$$

An inventory turnover ratio standing by itself, means absolutely nothing, because, there is no fixed norm for inventory turnover. This depends on the nature of industry and on the sales policies followed by the company. To give meaning to turnover figure, one must compare it with other such figures, so that a comparative analysis with industry the appropriate. For example, when a company's turnover ratio in the year just ended is 6.

whereas in the preceding year it, was 6 1/2 and in the year before it was 7, strong evidence of growing deficiency in inventory management is brought about. Thus, it furnishes sufficient ground to warrant analysis of the situation. High inventory turnover indicates that more sales are being produced by a unit of investment in stocks and thus reflects an effective inventory management. A low turnover ratio may indicate that the concern has accumulated unsaleable goods or may be the inventories that are over valued.

It affords useful information whether capital is being locked up in slow moving stocks or whether Gross Profit may be increased by reducing prices in order to induce a rapid rate of turnover. Therefore, an increase in the ratio may indicate expansion of the business and a decrease the opposite. The ratio is otherwise known as inventory ratio.

This Ratio can be improved in one of the three ways.

1. By keeping sales at the same level, while reducing the stock of finished goods.
2. By increasing sales, while keeping the of finished goods at the same level.
3. By increasing safes, while at the same time reducing the stock of finished goods?

The ratio also shows whether the concern is indulging in overtrading or under trading. A sharp increase in this ratio along with sharp increase in the ratio of inventory to working capital may indicate overtrading and sharp fall in this ratio may indicate under trading.

Illustration: 1

Calculate the stock Turnover Ratio for the year from the following data:

(a) Annual sales Rs. 50,375 at 25% profit on cost

(b) Opening stocks at cost every month:

	Rs.		Rs.
January	10,000	July	9,500
February	12,000	August	10,000
March	12,000	September	8,900
April	9,000	October	8,800
May	10,400	November	7,300
June	9,000	December	13,000

Solution :

Gross Profit = 25% on cost

This means 20% profits on sales

Cost of Goods sold for the year = Rs. 50,375 minus 20% thereof

= Rs. 50,375 -10,075

= Rs. 40,300

Instead of taking the average of opening and closing stocks it is possible to take average of the 12 months stocks.

The total of 12 months' stock is 1,20,900. Dividing it by 12 the average stock for the year comes to Rs. 10,075.

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods sold}}{\text{Average stock}} = \frac{40,300}{10,075}$$

12. Return on Proprietors' Fund

Meaning :

Return on Proprietors' Fund, also called Return on Shareholders' Investment brings relationship between the Proprietors' Fund and Net Profit. This ratio measures the profitability of the business (i.e.) it indicates the rate of return a business has earned on the investment of owners.

Components :

Proprietors' Funds include all categories of share capital, capital reserves, all revenue reserves, and accounts of appropriations of profits. It is usual for the calculation of this ratio to take into consideration the simple average of such shareholders' investment as on the date of commencement or the figures at the beginning and end of the year. But additional shareholder's investment obtained during the year should be excluded unless such addition was made in the middle of the year or earlier.

The Net Profit taken into account is the Net profit after tax and interest on long term liabilities. This is so because this income alone—would be available to the shareholders for dividend.

This ratio is expressed in terms of percentage.

FORMULA:

$$\text{Return on Proprietors' Fund} = \frac{\text{Net Profit (after int., \& taxes)}}{\text{Proprietors' Fund}} \times 100$$

INTERPRETATION:

Suppose, the net profit is Rs. 15,000 and the proprietors' fund amounted to Rs. 2,00,000. In this, the return on proprietors' fund is

$$\frac{\text{Net Profit}}{\text{Proprietors' Fund}} \times 100 = \frac{15,000}{2,00,000} \times 100 = 7.5\%$$

13. Return on Proprietors' Equity

Return on Proprietors' Equity is the ratio of Net profit to Proprietors' Equity. This ratio also indicates the profitability of the business. It is usually expressed in terms of percentage,

ALTERNATIVE NAME:

This ratio is otherwise known as Return on Shareholders' Equity.

COMPONENTS:

Proprietors' Equity stands for Equity Share Capital plus all undistributed profits and reserves belonging to equity shareholders. It is otherwise known as Net worth or Equity.

The ratio can be expressed as follows

$$\frac{\text{Net Profit (after taxes min us preference dividend)}}{\text{Proprietors' Equity}} \times 100$$

Purpose :

This rate of return measures the profitability of the capital employed in the business by equity shareholders. It measures the business success and managerial efficiency

14. Return on Equity Share Capital

Meaning :

In the analysis of overall profitability, this ratio is to be considered. It relates the net profits available to equity shareholders to the amount of capital invested by them. It brings out a relationship between the Equity Share Capital and Net Profits after giving the dividend to the Preference shareholders. Whether profits are satisfactory or not will be shown by this ratio.

Components :

Net profits are arrived at after deducting income-tax and the dividend due to preference shareholders. If there are any participating preference shareholders, such participating dividend would also have to be deducted in order to arrive at net profits due to equity shareholders.

This is usually expressed in percentage.

Formula :

Return on Equity Share Capital =

$$\frac{\text{Net Profit after taxes minus preference dividend}}{\text{Equity Share Capital}} \times 100$$

Purpose :

This rate of Return on Equity Capital shows what percentage the earned profit of the period bears to the amount of capital invested by equity shareholders for the risks borne. It is used to compare the performance of a company's equity capital with those of other companies. It reflects the character of the management, the probable demand for the company's products, industrial conditions and so on.

Interpretation :

When , the Net Profit is Rs. 3½ lakhs and the Equity Share Capital amounts to Rs. 20 lakhs, the Return on Equity Share Capital would be.

$$\begin{aligned} &= \frac{\text{Net profit – preference Dividend}}{\text{Equity Share Capital}} \times 100 \\ &= \frac{3,50,000}{20,00,000} \times 100 \\ &= 17.5\% \end{aligned}$$

The company with higher return on equity capital will be favoured by the investors when two companies are alike in quality and are equally well known.

This ratio can be improved by making greater use of borrowed funds as the lenders are paid interest at a fixed rate only and the interest paid to them reduces the taxable income and income tax payable whereas the earnings realised by making use of borrowed funds are usually at a rate

higher than the net cost of these funds. The savings thus effected go to increase the profit divisible among the equity shareholders. However, a reasonable proportion has to be maintained between borrowed funds and shareholders' funds.

Trading on Equity :

Funds are raised at a rate of interest (or dividend in case of Preference Share) and are made to earn a large profit; the difference between the profit earned and the interest (or dividend in case of Preference Share), paid belongs to the Equity shareholders who have the right of receiving the residual profits. But, this does not mean that the full

amount will be distributed as dividend. Rather, this is the amount attributable to risk-bearing Equity Capital.

By 'Trading on Equity', we imply the situation where the amount paid to fixed interest bearing securities (such as Debentures, Preference Shares etc.,) are proportionately less than the earning on the capital contributed by these sources.

This essence of trading on equity is the effective use of these funds at an explicit return in excess cost.

The point that the company should be able to meet the obligations in respect of interest and dividend on Equity share is important.

It is interesting to note that there was a time when it was thought that the company should not borrow at all and that they should do all their work with their own funds. But now-a days, a company which does not practice 'trading on equity' to the extent considered proper would be disfavoured by the investors. It is obvious that a company which does not resort to borrowing to the desired extent, will be limiting its operations unnecessarily and would be foregoing profitable opportunities of expansion.

In short 'trading on equity' occurs when capital other than those of equity shareholders is employed. Therefore, all concerns may be said to be 'trading on equity' but each one generates a return on commitments of equity shareholders depending upon the extent to which outside funds have been used and the explicit cost of such funds. Of course, there is a certain limit beyond which companies should not go.

15. Return on Capital Employed

Meaning:

What is the overall objective of a business? The overall objective of a business is to earn a satisfactory return on the funds invested in it while maintaining a sound financial position. It is a truism to say that proprietors invest money in a business to obtain satisfactory return on their capital. Therefore, the ultimate test of success of a business is its earning power. The Return on Capital Employed is considered to be the most significant from the management viewpoint. This will indicate the earning capacity of the business and will enable invaluable comparisons to be made with other periods and others business.

Alternative Name :

It is otherwise known as Return On Investment or simply ROI.

Purpose :

It shows the efficiency with which management has utilised the resources placed at their disposal. It is used to determine whether the expected or budgeted rate of return has been achieved or whether an alternative use of capital has been justified. It is also used as a basis for various managerial decisions like expansion and diversification of activities. It is the only measure which can be said to show satisfactorily the overall performance of an undertaking the stand-point of profitability-the benefits being obtained in the shape of income for the sacrifice involved in the form capital invested. By this, management may be able to follow the progress that is being made and to take corrective action, if necessary.

Components

1. Capital Base

Before computing the Returns on capital employed, one must be clear as to what constitutes "Capital". The Capital base chosen will depend upon the object of measurement:

If the objective is to measure financial success, the capital used may be.

(a) Equity Share Capital: (Total amount of Paid up Equity capital)

(b) Shareholders Equity : (i.e., Paid up Equity Share Capital plus Free Reserve or Retained Profits)

(c) Proprietors' Funds: (i.e., Paid up Equity Share Capital plus Preference Share Capital and Retained Profits)

(d) Total Capital employed : (Proprietors Funds plus long term borrowing and Debentures)

If, however, the objective of measurement is to appraise the efficiency of management in the use of capital employed, the capital base may be either Total Assets or Assets used in operations (Gross Capital Employed). When assets constitute the capital base they may be taken either at original cost representing the amount of the original investment or cost less depreciation (representing the current state of the investment). Sometimes, Total Assets less Current liabilities may also be taken as the capital base (Net Capital Employed). In order to calculate the capital employed, it is better to exclude intangible assets like Goodwill, Patent, Trade Mark and fictitious assets like Preliminary Expenses, Discounts on issue of shares etc.

2. Net Profit

The measure of net profit to be used will depend upon the capital base employed.

If the capital base used is Proprietor's Equity, then profits after interest charge should be employed, since the shareholders earn the residual income after all deductions. For these purposes net profit should be taken before deduction of corporate tax when management performance is assessed. This is, because, corporate taxes are outside the control of management. On the other hand, the net profits should be taken after deduction of corporate taxes when financial success is to be determined.

If assets constitute the capital base, non-operating as well as non-recurring income should be excluded from net profit. On the other hand, interest on long-term loans should be added back to profit so as to appraise the performance; of operating management in the use of assets.

This is, generally, determined by dividing the net profit by the shareholders funds plus long-term liabilities. Expressed as a ratio it is:

$$1. \text{ Return on capital Employed} = \frac{\text{profit}}{\text{Capital Employed}} \times 100$$

This ratio can be usefully broken up into two components leading to a better analytical insight into the interpretation of the return :

$$2. \text{ Return on capital employed} = \frac{\text{profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}} \times 100$$

Ratio 1 reveals the efficiency of trading operation of the business. It is a profitability ratio.

Ratio 2 reveals the degree of success in the utilisation of capital used in the business. It is a capital - turnover ratio

A business might be efficient in trading operations, showing a high profitability ratio. But this may be accompanied by excessive employment of capital in relation to the value of sales achieved by the business. For example, two companies may each achieve annual sales of Rs. 1 lakh and a net profit of Rs. 20,000 in a year. That is, Profitability Ratio is 20% for both the companies. If the first company has, however, an invested capital of Rs. 1 lakh and the second company a capital of Rs. 2 lakhs, it will be wrong to argue that both the companies have equal efficiency. Only when we bring in the Capital Turnover Ratio which in the case of first company is 100% and in the Second, 50% we approve the relative difference in the efficiency of the two companies.

Advantages

1. The ROI or Return On Investment is the only measure which can be said to show satisfactorily the benefits being obtained for the sacrifice involved.
2. It throws light on the comparative statistics of the earning capacity of the business as compared to the likely return on the alternative employment of the same capital elsewhere.
3. It is a good tool for making capital budgeting decisions. The relative profitability of future courses of actions such as expansion, introduction of new product etc.
4. It gives ideas for analysis and decisions to bring about effective change in the financial policies. For instance, borrowings should not be made when the rate of interest is higher than the rate of return.

5. It may be used as an instrument of control for making internal comparisons like the profitability of different products.

6. It allows external comparisons feasible.

If an adequate profit is earned, the business will be able to meet any unexpected competition or other adversities without great difficulty.

16. Return on Total Assets

The other name of Return on Total Assets is Return on Gross Capital employed or Total Capital Employed.

It brings a relationship between the Total Assets and Net Profit before preference dividend and interest expense. Total assets are contributed by both preference shareholders and creditors. Therefore, preference dividend and interest expense are not deducted from the income.

The ratio measures profitability of total capital committed to the business. This helps in knowing as to what extent the management has been successful in enhancing the income of shareholders through the use of borrowed fund. Suppose, the rate of return on total assets is 18% and the rate of interest on the borrowed capital is 10% then it means that the management has made saving of 8% (i.e., 18% minus 10%) through the use of borrowed capital and thus benefited capital. An investor in equity share of a company must take into account the above aspect.

It is calculated as

Return of Total Assets =

$$\frac{\text{Net Profit before Preference Dividend \& Interest Expenses}}{\text{Total Assets}} \times 100$$

17. Turnover of Fixed Assets or Sales to Fixed Assets

Turnover of Fixed Assets, [also called Fixed Assets Turnover or Net Sales to Fixed Assets Ratio] shows whether fixed assets are fully utilised.

It is calculated as

$$\frac{\text{Net Sales}}{\text{Fixed Assets}}$$

Any over-investment in fixed assets and the ratio of cost of goods manufactured to fixed assets will be disclosed by the turnover of fixed assets. A high ratio indicates better use of fixed assets than a low ratio.

In Capital intensive industries, ratio is higher while it is lower in labour-intensive industries. The ratio will fall, if facilities remain under-utilised. On the other hand, if the ratio increases over a period of time, the business is said to have increased its sales without an increase in the investment in fixed capital: However, such inference should be made with due caution. The increase may be due to a number of factors like market condition, demand, ability and efficiency of marketing functions etc. According to Meyers, the ratio is not recommended for general use since the book value of fixed assets related to sale may not be very meaningful. Some authors use cost of goods instead of sales.

18. Turnover of Total Assets

Turnover of Total Assets, also called Total Assets Turnover, is calculated by dividing the net sales by total assets.

$$\frac{\text{Net Sales}}{\text{Total Assets}}$$

The traditional standard for the ratio is two times. A high ratio indicates over-trading of fixed assets while a low ratio indicates excessive investment i.e., symptom of idle capacity. Understanding is more difficult, to remedy than overtrading and may call for a drastic reorganisation of the whole business.

Some authors use cost of goods sold instead of sales.

19. Turnover of Working Capital or Sales to Working Capital

Turnover of working capital is also called Working Capital Turnover. It is calculated by dividing the Net Working Capital by Net Sales. Whether working capital is being effectively used or not will be shown by the working capital turnover ratio.

$$\frac{\text{Net Working Capital}}{\text{Net Sales}}$$

It indicates whether the business is being operated on a small or large amount of working capital in relation to sales. It helps us to test the efficiency with which the working capital is utilised. A high ratio indicates efficiency and a low ratio indicates inefficiency. Sales in respect to working capital should be normal. A low turnover of working capital may be the outcome of an excess working capital, slow turnover of inventories and receivables, a large cash balance etc. On the other hand, a high working capital turnover may be the result of favourable turnover of inventories and receivables or may reflect an

inadequacy of working capital. Considerable care should be exercised in interpreting the ratio; since, it is a composite of a number of relationships, each one of which should be analysed carefully to account for changes.

Sales to Net Worth

Sometimes, Sales to Share Capital or Total Net Worth is also calculated. Share Capital normally stands for equity capital. In some cases it includes preference share capital. When retained reserves are also included in the share capital, it is known as Net worth. When Sales figure is compared with Net Worth, it indicates the utilisation of capital and reflects the profit earning capacity of the business.

20. Turnover of Debtors or Debtors Turnover

Turnover of Debtors also called Debtors Turnover Period shows the rate at which the money is being collected from credit sales. In other words, the average collection -period can be ascertained. This collection period can be compared with the average collection period allowed by the company and conclusions regarding the liquidity can be drawn. It indicates the effectiveness of the organisation in respect of granting credit and the collection of debts. However, a low average collection period by itself does not indicate a comfortable position.

The company may be following a restrictive credit policy with adverse effect on sales and profits. A high average- collection period is indicative of liberal credit policy which may lead to high incidence of bad debts.

Debtors include Bills receivable but not debtors arising out of sales of assets. While calculating this ratio, it must be remembered that provision for

bad and doubtful debts is not to be deducted from total debtors, so that it will not give a false impression that debtors have been collected quickly.

Average Collection Period is obtained by dividing the Annual Net Credit Sales (exclusive of instalment sales), by 365 days in order to ascertain the average amount of credit sales per day. Then the total of Sundry Debtors and Bills Receivables (including discounted bills) is divided by the daily average credit sales, and the result is the daily average collection period in days.

This ratio can be calculated in two ways. It may be found out as shown below:

$$\text{Average Credit Sales Per day} = \frac{\text{Credit Sales}}{365}$$

$$\text{Number of days' Sales outstanding} = \frac{\text{S.Debtors} + \text{B / R}}{\text{Credit Sales per day}}$$

OR

$$\text{Debtors Velocity} = \frac{\frac{\text{S.Debtors} + \text{B / R}}{(\text{Credit Sales})}}{365}$$

OR

$$= \frac{\text{S.Debtors} + \text{B / R}}{\text{Credit Sales}} \times 365$$

Sometimes, average debtors may be calculated by dividing the sum of debtors in the beginning and at the end by 2.

Illustration : 2

A company sells for cash as well as on credit (though not on deferred instalment term). The following particular are extracted from its books of account for the year 2003.

	Rs.
(a) Total Gross Sales	2,00,000
(b) Cash Sales	40,000
(c) Sales Returns	14,000
(d) Sundry debtors for sales on 31-12-2003	18,000

(e) Bills Receivable as on 31-12-2003	4,000
(f) Provision for doubtful debts as on 31-12-2003	2,000
(g) Total Creditors on 31-12-2003	20,000

Calculate the Average Collection Period.

Solution:

	Rs.
Gross Sales	2,00,000
Less Cash Sales	40,000
	1,60,000
Less Sales Returns	14 000
Net Credit Sales	1,46,000

$$\text{Credit Sales Average Credit} = \frac{\text{Credit Sales}}{365}$$

$$\text{Sales per day} = \frac{1,46,000}{365} = \text{Rs. 400}$$

Total Trade Debtors	Rs. 18,000
Add Bills Receivable	Rs. 4,000
	Rs. 22,000

$$\text{Average Collection Period} = \frac{\text{S.Debtors + Bills Re ceivable}}{\text{Credit sales per day}}$$

$$= \frac{22,000}{400} = 55 \text{ days}$$

If the term of credit allowed is, say, a period of 30 days it means that some of the accounts are over due.

Note :

Information regarding (f) and (g) is irrelevant in the calculation of average collection.

This ratio may also be calculated in a way which is stated as under :

Average Days of Collection =

S.Debtors + Bill Receivable

Total Credit Sales

x365 days

[Note: When the credit sales figures are not available, total sales figures may be taken as credit sales]

Illustration: 3

The closing balances of Debtors and Bills Receivable amount to Rs. 40,000

Outstanding		Total credit sales for that month	
	Rs.		Rs.
October Sales	– 5,000		80,000
November Sales	– 10,000		1,00,000
December Sales	– 25,000		1,00,000

Find out the average collection period.

Solution:

The Proportions of outstanding to the respective sales figures are as follows

October	–	5,000	–	80,000	= 0.06	of the month's sale
November	–	10,000	–	1,00,000	= 0.10	„
December	–	25,000	–	1,00,000	= 0.25	„
					= 0.41	„

Average collection period is 0.41 of a month i.e. 0.41 x 30 = 12 day's credit. If the average collection period is too high, a liberal credit policy is indicated. This means locking up large funds in receivables, higher bad debts and reduced profits. Too low average collection period may be the result of tight credit policy. This would mean curtailed sales -and reduced profit. Comparison of the average collection period and terms of credit sales with the corresponding figures of other companies may provide an insight into the credit & collections policy and practice. Thus, the debtors turnover ratio is a good supplementary test of the validity of the current ratio. **Aging of**

Accounts :

It is yet another method of analysing the liquidity of receivables. This involves classifying the amounts due in each account according to the period

that is outstanding. For example such a classification on 31st December may reveal that 65% of the amounts outstanding are not more than a months old, 25% may be more than a month but less than 2 months 10% may be outstanding for more than 2 months but less than 3 months and so on. Hence, the account with outstanding dues which are long overdue need to be investigated and written off, if they are proved bad. One can get an accurate picture of the investment in receivable and changes in the basic composition of the investment overtime with the help of information on aging of accounts.

21. Creditors' Velocity

Creditors' Velocity indicates the number of times of payables in the credit purchase. It is found out by dividing Sundry Creditors and Bills payable by credit purchases.

$$\frac{\text{Sundry Creditors}}{\text{Credit Purchases}} \times 365$$

Suppose a company's Credit Purchase is Rs. 28 lakhs and the total of sundry creditors and bills payable is Rs. 4 lakhs. The creditors velocity is

$$\frac{4}{28} \times 365 = 52 \text{ days}$$

The Creditors Velocity should be read with normal credit received as also with actual Debtors' Turnover Ratio.

22. Ratio of Security

Ratio of Security refers to fixed Assets offered as security of fixed Liabilities. Fixed Liabilities in the form of mortgage deeds, or debenture bonds are secured by a charge on all the fixed assets. In that case, it would be best to obtain the market values of the fixed assets at the date of calculation. Otherwise depreciated book values of fixed assets may be taken. The total fixed assets, say, Rs. 50 lakhs to total fixed liabilities Rs. 28 lakhs would reveal 1.78. It means that the creditors will remain completely satisfied and the management need apprehend no trouble from them.

23. Solvency Ratio

Solvency Ratio is calculated by dividing the Total Liabilities (i.e., Current Liabilities and long-term Liabilities) by Total Assets (i.e., Current Assets and Fixed Assets). The object of this ratio is to show whether a company is able to meet its total

outside liabilities from total assets. If it is to do so, the company is said to be solvent.

Illustration: 4

LIABILITIES	Rs.	ASSETS	Rs.
Share Capital	5,00,000	Fixed Assets	7,00,000
Long - term Liabilities		2,00,000	Current Assets
3,00,000			
Current Liabilities	3,00,000		
	10,00,000		10,00,000

Calculate the Solvency Ratio.

Solution :

$$\begin{aligned}
 \text{Solvency Ratio} &= \frac{\text{Total(outside) Liabilities}}{\text{Total Assets}} \times 100 \\
 &= \frac{2,00,000 + 3,00,000}{7,00,000 + 3,00,000} \times 100 = \frac{5,00,000}{10,00,000} \times 100 \\
 &= 50\%
 \end{aligned}$$

The company is solvent because, its total liabilities are only 50% of total assets.

24. Analysis from Equity Shareholders Point of View

Equity shareholders are primarily interested in the capital appreciation of their investments and dividend per share. Both these factors are influenced by the earnings of the company.

From the equity Shareholders point of view, the following ratios are calculated for undertaking a study of the company's worth.

- (a) Earnings per Share (E.P.S.)
- (b) Price Earning Ratio [P .E.R.]

- (c) Pay Out Ratio
- (d) Dividend Yield.
- (e) Cover for Preference & Equity Dividends.

a. Earning per Share [E.P.S.]

This is ascertained by dividing the Net profit (minus Preference Dividend) by the number of Equity Shares. This gives the income earned for each equity share.

$$\text{E.P.S.} = \frac{\text{Net Profit} - \text{Preference Dividend}}{\text{Number of Equity Shares}}$$

Suppose, Star Co., Ltd is having 10,000 Equity Shares and the net profit after meeting Preference Dividend is 1,00,000. Then,

$$\text{E.P.S.} = \frac{1,00,000}{10,000} \text{ Rs. } 10$$

The more the EPS, the better is the company. It enhances the possibility of more cash dividend or bonus shares, cumulative effect will be reflected in a higher market price of the equity share. However EPS must not be used blindly, since, it does not represent the various financial operations of the business. Moreover, comparisons of EPS of different companies can be distorted due to different accounting procedures to inventories, depreciation etc.

b. Price Earning Ratio : [P.E.R.]

This ratio is calculated by the following formula:

$$\text{Price Earning Ratio} = \frac{\text{Market Price Per Equity Share}}{\text{E.P.S}}$$

Suppose Star Company's share is priced at Rs. 80 and E.P.S. as Rs. 10.

$$\text{Price Earning Ratio} = \frac{80}{10} = 8$$

This ratio shows how many times the annual earnings the shareholders are willing to pay to get a share. This is useful for predicting the market price of equity share. For example E.P.S. of Star Co., Ltd., is Rs. 10 and the market price of its equity share is Rs. 80, while Price Earning Ratio

of other companies is 9, then it can be easily concluded that the equity share of Star Co., is under-valued by Rs. 10.

E.P.S. of Star Co., Ltd., = Rs.10.

Market price must be 9 times of E.P.S.

9x Rs.10 = Rs. 90

But the market price is only Rs. 80

Hence, it is under valued by (90 -80) Rs. 10. This type of calculation helps the investor to come to a conclusion whether he should buy the shares in question.

c. Pay-Out Ratio : [P.O.R]

The Payout Ratio or Dividend Payout Ratio is the ratio of dividends per share to E.P S. It indicates what portion of EPS has been used for paying dividend and what has been retained for ploughing back. It is determined by using the following formula:

$$\text{Pay out - Ratio} = \frac{\text{Dividend per Equity Share}}{\text{E.P.S}}$$

Suppose, Star Co. distributes Rs. 6 by way of dividend per equity share.

$$\text{Pay Out - Ratio} = \frac{6}{10} = 60\%$$

The ratio helps the investor to find out the fact whether the company has used whole of its earning for paying dividend or has retained a good portion for expansion schemes. It is a significant ratio since, the investors primarily have interest in capital appreciation.

d. Divident Yield Ratio :

Dividend Yield Ratio or Simply Yield Ratio is calculated as follows:

$$\frac{\text{Dividend per share}}{\text{Market price per Equity Share}} \times 100$$

The ratio indicates the effective return on investment which potential investors may hope to earn. For example, the Star company declares 20% dividend on its share of Rs. 100 each of 'which paid up'. The market price is Rs. 160, then the Yield Ratio will be calculated as under :

$$\text{Dividend per Share} = \frac{20}{100} \times \text{Rs. } 80 = \text{Rs. } 16.$$

$$\begin{aligned} \text{Yield Ratio} &= \frac{\text{Dividend per Share}}{\text{Market Price Per Share}} \times 100 \\ &= \frac{16}{160} \times 100 \\ &= 10\% \end{aligned}$$

Therefore, the effective earning -rate to the investor in such shares of the above company is only 10% (not 20% declared by the company).

e. Cover for Preference & Equity Dividends :

Cover for Preference Dividend is arrived at by dividing the Net profit after tax by preference Dividend.

Cover for Equity Dividend is arrived at by dividing the Net Profit after deducting Preference Dividend by Equity Dividend.

Illustration: 5

Calculate the cover for the Preference Dividend and Equity Dividend from the following information:

9% 20,000 Preference Shares of Rs. 10 each.

60,000 Equity Shares of Rs. 10 each

Profit after tax at 50% Rs. 11,80,000.

Equity Dividend paid at 20%.

Solution

1. Dividend on preference shares

$$20,00,000 \times \frac{9}{100} = \text{Rs. } 18,000$$

2. Dividend on Equity Shares

$$6,00,000 \times \frac{20}{100} = \text{Rs. } 1,20,000$$

3. Cover for Preference Dividend

$$= \frac{\text{Net Profit after tax}}{\text{Preference Dividend}}$$

$$\frac{1,80,000}{18,000}$$

4. Cover for Equity Dividend

$$= \frac{\text{Net Profit after tax minus preference Dividend}}{\text{Equity Dividend}}$$

$$= \frac{1,62,000}{1,20,000} = 1.35 \text{ times}$$

Sometimes students may be asked to find out net cash flow in connection with above illustration.

Net profit after tax		Rs. 1,80,000
Less: Preference Dividend	Rs. 18,000	
Equity Dividend	Rs. 1,20,000	1,38,000
Net cash flow		42,000

Note: If any Depreciation is given in the problem it should be added back along with Net Cash Flow. This will be discussed in a detailed way in your subsequent lessons.

Sometimes, students may be asked to find out Fixed Charge Cover or Fixed Interest Cover; It indicates the number of times that fixed interest charges are covered by earnings (i.e., operating profits) It is a measure of financial strength of an enterprise and indicates the margin of safety of the long-term creditors, It is calculated as

$$\frac{\text{Net Profit after tax}}{\text{Int.on Debentures + Pref.Dividend}}$$

For example the net profit after tax of a company is Rs. 10,000 and the interest on debentures and preference dividend amount to Rs. 8,000 and Rs. 3,000 respectively then Fixed Charges Cover will be calculated like this:

$$\text{Fixed Charges Cover} = \frac{10,000}{8,000 + 3,000} = 10 \text{ times}$$

Higher the ratio, greater is the safety for the lenders.

Analysis of financial statements accounts ratios

NOTES

The Accountant has ascertained the following information: -

Market price of Equity Shares Rs. 40

(e) The Net Cash flow

(a) The dividend yield on the Equity Shares

(i.e.) Rs. 2

(b) The cover for preference and Equity Shares

$$1) \text{ Cover for preference shares} = \frac{\text{Net profit after tax}}{\text{Preference Dividend}}$$

$$= \frac{2,70,000}{27,000} = 10 \text{ times}$$

Preference Dividend = 9% on Rs. 3,00,000 = Rs. 27,000

$$\frac{\text{Net Profit} - \text{Preference Dividend}}{\text{Equity Dividend}}$$

2) Cover for Equity Shares =

$$\frac{2,70,000 - 27,000}{1,60,000}$$

$$\frac{2,43,000}{1,60,000} = 1.52$$

(Equity Dividend = 20% on Rs. 8,00,000 = Rs. 1,60,000)

c) The Earning per share

$$\frac{\text{Net Profit after tax} - \text{Preference Dividend}}{\text{Number of Equity Shares}}$$

Earnings per share =

$$\frac{2,70,000 - 27,000}{80,000}$$

$$\frac{2,43,000}{80,000}$$

= Rs. 3.375

d) The price Earning Ratio

$$\frac{\text{Market Price per Equity Share}}{\text{Earnings per Share}}$$

Price Earnings Ratio =

$$\frac{40}{3.375}$$

= 12.

e) The Net Cash Flow

	Rs.	Rs.
Net Profit after tax	2,70,000	
Add : Depreciation	60,000	
Funds from operations (or cash Profit)		3,30,000
Less : Equity dividend 20% of 8,00,000	1,60,000	
Preference dividend 9% of 3,00,000	27,000	

	1,87,000
Net Cash flow	1,43,000

*Analysis of financial
statements accounts
ratios*

NOTES

You have already learnt the technique and purpose of calculating various ratios. One of the important principles of financial statement analysis is that certain reasonable proportions should exist among the various items in the financial statements. A comparative study of these relationships (expressed as pure ratios or percentage or fractions) reveals liquidity, profitability as well as the overall financial position of an enterprise.

These ratios in themselves are meaningless unless they are compared to some appropriate standard.

What is an appropriate standard? It is very difficult to answer. It is only mental generalisation of what is adequate and normal. There are four common standards used in this connection. They are as follows

1. Absolute Standards
2. Historical standards
3. Horizontal standards
4. Budgeted Standards

1. Absolute Standards are those which become generally recognised as being desirable regardless of type of company. However, there can hardly be an independent absolute standard which is desirable in all cases.

2. Historical Standards (also known as Internal Standards) involve comparing a company's own past performance as standard for the present or future. It simply shows that the current period is better or worse than the past. However, it does not provide a sound basis for judgement as historical performance may not have represented an acceptable standard.

3. Horizontal Standards (also known as External Standards) compare one company with another company or companies of the same nature. We know that no two companies are similar. Variations in accounting methods lead to significant differences in ratios. Such industry standards are periodically published in the financial dailies.

4. Budgeted Standard is arrived at after preparing the budget for a period. Such standard may be set by management as goals. They can be very useful because they are evolved after taking into account the prevailing conditions and the specific company situation. In fixing the budgeted standards the

management has to pay due attention to historical as well as horizontal standards.

Students are required to answer both the types of questions theory and problem. For interpretation students have to rearrange the data supplied to them. It is essential for comparison purposes. It may be appreciated that ratio taken separately may be of no use. Hence, any figure must be read with other figures, so that fruitful Interpretation may be made.

Students are generally asked to compute the given ratios in the problem. Sometimes, they may be asked to compute a group of ratios say Long term Solvency Ratios, Short term Solvency Ratios and So on. The following table gives various Ratios which may be calculated, as test for various conditions:

However, if a problem does not contain sufficient information for calculating any of these ratios, you can calculate other ratios like fixed assets to Net Worth Ratio, Sales to Capital Employed and so on.

Both Debtor's Turnover Ratio & Stock Turnover Ratio show the movement of Current Assets. Similarly, Current Ratio & Acid Test Ratio show the activity of the business.

At time, you may be asked to prepare Trading and Profit and Loss' Account and Balance Sheet when as many details as possible from the given ratios are available. For the purpose of easy working a table showing the formula of various ratios is given below:

S.NO	RATIO	FORMULA
1.	Current Ratio	$= \frac{\text{Current Assets}}{\text{Current Liabilitie s}}$
2.	Acid Test Ratio	$= \frac{\text{Liquid Assets}}{\text{Liquid Liabilitie s}}$
3.	Proprietary Ratio	$= \frac{\text{Proprietors Funds}}{\text{Total Assets}}$
4.	Assets – Proprietorship Ratio	$= \frac{\text{Fixed Assets}}{\text{Proprietors' Fund}} \times 100$

5. Debt – Equity Ratio = $\frac{\text{Debt}}{\text{Equity} + \text{Debt}}$
6. Capital Gearing Ratio = $\frac{\text{Equity Capital}}{\text{Fixed Income Bearing Securities}}$
7. Gross Profit Ratio = $\frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$
8. Net Operating Profit Ratio = $\frac{\text{Net (Operating) Profit}}{\text{Net Sales}} \times 100$
9. Expenses Ratio = $\frac{\text{Individual Expense}}{\text{Net Sales}} \times 100$
10. Operating Ratio = $\frac{\text{Cost of Goods Sold} + \text{Operating Expenses}}{\text{Net Sales}}$
11. Stock Turnover Ratio = $\frac{\text{Cost of Goods sold}}{\text{Average Stock}}$
12. Return on Proprietors' Fund = $\frac{\text{Net Profit (after Int. \& Tax)}}{\text{Proprietor's Funds}} \times 100$
13. Return on Proprietors' Equity = $\frac{\text{Net Profit (after taxes min us pref. Dividend)}}{\text{Proprietors Equity}} \times 100$
14. Return on Equity Share Capital = $\frac{\text{Net Profit (after taxes min us pref. Dividend)}}{\text{Equity Share Capital}} \times 100$

15. Return on Capital Employed = $\frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital Employed}} \times 100$
16. Return on Total Assets = $\frac{\text{Net profit before Pref.Dividend and interest expenses}}{\text{Total Assets}} \times 100$
17. Turnover to Fixed Assets = $\frac{\text{Net Sales}}{\text{Fixed Assets}}$
18. Turnover to Total Assets = $\frac{\text{Net Sales}}{\text{Total Assets}}$
19. Working Capital Turnover = $\frac{\text{Net Working Capital}}{\text{Net Sales}}$
20. Debtor's Velocity = $\frac{\text{Debtors} + \text{B/R}}{\text{Credit Sales}} \times 365$
21. Creditors' Velocity = $\frac{\text{Creditors} + \text{B/P}}{\text{Credit Sales}} \times 365$
22. Ratio of Security = $\frac{\text{Fixed Assets}}{\text{Fixed Liabilities}}$
23. Solvency Ratio = $\frac{\text{Outside Liabilities}}{\text{Total Assets}}$

$$24. \quad \text{E.P.S.} = \frac{\text{Net profit min us Pr ef.Dividend}}{\text{Number of Equity Shares}}$$

$$25. \quad \text{P.E.R.} = \frac{\text{Market for Equity Share}}{\text{E.P.S.}}$$

$$26. \quad \text{P.O.R.} = \frac{\text{Dividend per Equity Share}}{\text{E.P.S.}}$$

$$27. \quad \text{Yield} = \frac{\text{Dividend per Equity Share}}{\text{E.P.S.}}$$

$$28. \quad \text{Cover for Preference Dividend} = \frac{\text{Net Pr ofit after tax}}{\text{Pr eference Dividend}}$$

$$29. \quad \text{Cover for Equity Dividend}$$

$$= \frac{\text{Net profit after tax min us Pr ef.Dividend}}{\text{Equity Dividend}}$$

30. Other Ratios:

a) Ratio of fixed Assets to Proprietors Funds

$$= \frac{\text{Fixed Assets}}{\text{Pr oprietors' Fund}} \times 100$$

$$b) \quad \text{Ratio of Current Assets to Proprietors Funds} = \frac{\text{Current Assets}}{\text{Pr oprietors' Fund}}$$

NOTES

		$\frac{\text{Fixed Assets}}{\text{Proprietors' Fund}}$
c)	Ratio of Fixed Assets to Current Assets	
		$\frac{\text{Sales}}{\text{Total Funds Employed}}$
d)	Ratio of Sales to Total Funds Employed	
		$\frac{\text{Proprietor's Funds}}{\text{Total Equities}}$
e)	Shareholders' Equities to Total Equities Ratio	
		$\frac{\text{Net profit before charging Interest and Income - tax}}{\text{Periodic Interest on Long term Debt}}$
f)	Net Income to Debt Service Ratio	
		$\frac{\text{Cash Available}}{\text{Periodic Cash payment of Principal \& Interest}}$
g)	Cash to Debt Service Ratio	
		$\frac{\text{Net Worth}}{\text{Net Sales}}$
h)	Net worth to Sales	

TEST FOR	RATIO USED	PURPOSE
Short-term solvency or Liquidity (Liquidity Ratios)	1. Current ratio 2. Liquid Ratio	Adequacy of working capital ability to meet current liabilities
Long-term solvency	1. share holder's equities to total equities ratio 2. net income to debt service ratio	Adequacy of shareholder's contribution ability to meet long term liabilities availability of cash resources to meet long term liabilities
Profit earning capacity	1. sales ratios (a) Sales of fixed assets (b) Sale of working capital 2. Expenses ratios (a) factory cost to sales (b) Administration cost to sales (c) any other expense to sales. 3. Profit ratios (a) Gross Profit Ratio (b) Return on	Ability to make sufficient sales Ability to bring down expenses Ability to earn sufficient profits

proprietor's funds
(c) Return on equity
share capital

Ability to avoid over
trading ability to avoid
over capitalization

*Analysis of financial
statements account
ratios*

NOTES

Financial trend	1. current ratio	
	2. proprietary ratio	
	3. turnover of debtors	Ability to keep sound credit policies ability to keep minimum investment in stock
	4. stock turnover ratio	ability to earn sufficient profits
	5. net profit to proprietor's fund	

Illustration : 7

The following are the summarized Profit & Loss Account of Hind Products Ltd., for the year ending 31st December and the Balance Sheet as on that date:

From the above statements you are required to calculate the following ratios and state the purpose they serve:

- Current Ratio
- Operating Ratio
- Stock Turnover Ratio
- Return on Total Resources
- Turnover of Fixed Assets

Solution :

$$\begin{aligned}
 \text{a) Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\
 &= \frac{1,49,000 + 71,000 + 30,000}{1,30,000} \\
 &= \frac{2,50,000}{1,30,000} = 19:1
 \end{aligned}$$

The standard laid down for the current ratio is 2:1. Though 1.9 : 1 is very near to the standard, the fact has to be kept in mind that a very large part of current assets consists of stock which is the least liquid current assets. Current ratio is not at all favourable. Thus the purpose of the current ratio is to test the normal solvency of the business.

		<u>Cost of goods sold + Operating Expenses</u>	
b) Operating Ratio =		Net Sales	
COST OF GOODS SOLD :		Opening Stock	99,500
		Purchase	5,45,250
		Incidental Expenses	14,250
			<hr/>
6,59,000			
Less : Closing stock			1,49,000
			<hr/>
			5,10,000
			<hr/>
		<u>Rs.5,10,000 + 30,000 + 1,50,000 + 15,000</u>	
Operating Ratio =		8,50,000	
		 <u>7,05,000</u>	
		= 8,50,000	
		= 0.83 : 1	

This shows that out of every Re.1 worth of sales 83 paise constitute the cost of goods sold and operating expenses. Thus, the purpose of this ratio is to ascertain the operational efficiency of the management.

$$\frac{\text{Cost of Goods sold}}{\text{Average Stock}}$$

c) Stock Turnover Ratio

=

$$\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

Average Inventory

=

2

$$\frac{\text{Rs.99,500} + 1,49,000}{2}$$

=

2

$$\frac{\text{Rs.2,48,500}}{2} = \text{Rs.1,24,250}$$

=

2

$$\frac{\text{Cost of Goods sold}}{\text{Average Stock}}$$

Stock Turnover Ratio

=

$$\frac{5,10,000}{1,24,250}$$

=

$$4.1 : 1$$

=

4.1 : 1

It means that stock is turned over slightly more than 4 times on the average during the current year. The purpose of this ratio is to indicate the marketing efficiency of the business.

$$\frac{\text{Net Profit}}{\text{Total Resources}} \times 100$$

d) Return on Total Resources:

=

$$\frac{\text{Rs.1,50,000}}{\text{Rs.4,80,000}} \times 100$$

= 31%

This shows that Rs.31 is earned on every Rs.100 worth of total assets. In other words, the business has given a return of 31% on total resources during the current year.

Analysis of financial
statements accounts
ratios

NOTES

Check your progress

2. Fill in the blanks :

a) Standard current ratio is _____.

b) Standard Quick ratio is _____.

c) Acid test ratio is a test of _____.

d) Dividing net sales by average debtors would yield _____.

e) When net sales is Rs.2,50,000 and the debtors are Rs.50,000, the average collection period is _____.

It we take only the operating net profit, then the return on total resources would be:

$$\text{Return on Total Resources} = \frac{\text{Net (Operating) Profit}}{\text{Total Resources}} \times 100$$

Net Operating Profit

Gross Profit as per problem Rs.3,40,000

Less : Operating expenses excluding expenses
Rs.1,80,000

Rs.1,60,000

$$\text{Net Operating Ratio} = \frac{1,60,000}{48,000} \times 100$$

$$= 38.3\%$$

The object of this ratio is to test the profitability of the business and assess the efficiency of this operating of the business.

$$\text{e) Turnover of Fixed Assets} = \frac{\text{Net Sales}}{\text{Fixed Assets}}$$

Fixed Assets:

Land & Buildings 1,50,000

Plant & Machinery 80,000

2,30,000

$$\text{Turnover of Fixed Assets} = \frac{8,50,000}{2,30,000}$$

$$= 3.7 : 1$$

This means that net sales amounted to Rs. 3.70 for every rupee worth of fixed assets. The object of this ratio is to measure the productivity of fixed assets.

It is also usual to calculate this ratio by using the figure of cost of goods sold.
By this process.

$$\text{Turnover of Fixed Assets} = \frac{\text{Cost of goods sold}}{\text{Fixed Assets}}$$

This shows that for every one rupee invested in fixed asset, goods costing Rs. 2.22 have been sold. The object of this ratio is to indicate the proportion of goods sold in relation to investment in fixed assets.

Illustration: 8

Following is the Balance Sheet of Y Company Ltd.,

BALANCE SHEET

As At 31st March 1998

During the year, provision for taxation was Rs. 20,000. Debentures are repayable in 1998 and Public Debt in 2003. Sales during the year were Rs. 3,00,000. Dividend was proposed for Rs. 10,000. Profit carried forward from the last year Rs. 15,000.

You are required to calculate

- (a) Short-term Solvency Ratios
- (b) Long-term Solvency Ratios and
- (c) Sales Ratios.

Solution:

a) SHORT – TERM SOLVENCY RATIOS

They include normally

- i) Current Ratio and
- ii) Acid Test Ratio

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

$$= \frac{\text{Rs.2,000} + 10,000 + 30,000 + 20,000 + 70,000 + 40,000}{\text{Rs.3,000} + 96,000 + 7,000 + 10,000 + 20,000}$$

$$= \frac{1,72,000}{1,36,000}$$

$$= 172 : 136$$

$$= 13 : 1$$

This means that the company is having Rs. 1.3 Current assets as against Rs.1.3 Current Liabilities as against fall in price. Therefore, current ratio is not a favourable one. In other words, financial position is unsound.

ii) Acid Test Ratio:

$$\begin{aligned} \text{Acid Test Ratio} &= \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}} \\ \text{Liquid Assets} &= \text{Current assets} - \text{Stock} \\ \text{Liquid Liabilities} &= \text{Current Liabilities} - \text{Bank O/D} \end{aligned}$$

Note: (Some writers do not prefer to exclude bank overdraft. In that case, the formula will be liquid assets divided by current liabilities).

$$\begin{aligned} \text{Acid Test Ratio} &= \frac{\text{Rs.2,000} + 10,000 + 30,000 + 20,000 + 70,000}{1,33,000} \\ &= \frac{1,32,000}{1,33,000} \\ &= 132 : 133 \\ &= 0.99 : 1 \end{aligned}$$

This shows that the company's immediate resources for meeting current liabilities are little less than their obligations. Therefore its financial position cannot be said to be very strong. This fact is supported by current ratio also.

c) Long – Term Solvency Ratios

They include normally (i) Shareholder's Equities to Total Equities Ratio (ii) Net Income to Debt Service Ratio (iii) Cash to Debt Service Ratio.

i) Shareholders equities to total equities ratio:

$$= \frac{\text{Proprietors' Fund}}{\text{Total Equities}}$$

$$\begin{aligned}
 & \frac{1,00,000 + 1,00,000 + 1,51,000 + 20,000}{5,67,000} \\
 = & \frac{3,71,000}{5,67,000} \\
 = & 371 : 567 \\
 = & 0.65 : 1
 \end{aligned}$$

Analysis of financial
statements accounts
ratios

NOTES

It means that out of every investment of Re. 1 at company shareholders contribution is only 65 paise. In other words, the cushion against fall in price of assets in case of liquidation of the company is only 35 paise. This margin is not a satisfactory one.

	Net income	Rs.
(i)	Profit as per Balance Sheet	20,000
	Add : Transfer to Proposed Dividend	
	10,000	
	Add : Provision for taxation	20,000
		<hr/>
		50,000
	Less : Carried forward from last year	15,000
		<hr/>
	Net Income before charging Income Tax	35,000
		<hr/>

Periodic Interest:

7% Debentures Rs.40,000	=	2,800
8% Public Debt. Rs.20,000	=	1,600
		<hr/>
		4,400
		<hr/>

$$\begin{aligned}
 & \frac{35,000 + 4,400}{4,400} \\
 = & \frac{39,400}{4,400} = \frac{394}{44} \\
 = & 9 \text{ times (approx)}
 \end{aligned}$$

Earnings of the company from this angle is very sound.

iii) Cash to Debt Service Ratio:

Cash to Debt Service Ratio

$$= \frac{\text{Cash Available}}{\text{Periodic cash payment of Principal \& Interest}}$$

$$= \frac{\frac{\text{Cash in Hand} + \text{Cash at Bank}}{\text{Debentures} + \text{Public Debt}} + \text{Interest on them}}{\frac{10}{5}}$$

$$= \frac{\frac{\text{Rs.2000} + 10,000}{\text{Rs.40,000} + \frac{\text{Rs.20,000}}{5}} + 4,400}{10}$$

$$= \frac{\text{Rs.12,000}}{\text{Rs.4,000} + 4,000 + 4,400} = \frac{12,000}{12,400}$$

$$= \frac{30}{31} = 0.96 : 1$$

The position is not satisfactory.

c) Sales Ratios

Sales Ratios include (i) Sales to Fixed Assets and (ii) Sales to Working Capital

(i) Sales to Fixed Assets

$$\frac{\text{Net Sales}}{\text{Fixed Assets}} = \frac{3,00,000}{3,85,000}$$

$$= 0.77 : 1$$

*Analysis of financial
statements accounts
ratios*

NOTES

$$= \frac{\text{Net Working Capital}}{\text{Sales}}$$

$$\frac{36,000}{3,00,000} = 0.12 : 1$$

	2002	2003		2002	2003
	Rs.	Rs.		Rs.	Rs.
To Opening Stock	1,25,000	1,33,000	By Sales	6,00,000	
7,48,000					
To Purchases	4,80,000	5,84,000	By	Closing	Stock
1,33,000	1,21,000	To Gross	Profit	C/d	1,28,000
1,52,000					
7,33,000	8,69,000		7,33,000	8,69,000	

To Administration Expenses				
	38,000	38,000	1,52,000	1,28,000
To Warehousing Expenses				
	48,000	38,000		
To Selling Expenses		28,000	22,000	
To Interest	4,000	-		
To Net Profit	34,000	30,000		
	1,52,000	1,28,000		1,52,000
1,28,000				

You are required to ascertain the following ratios for both the years and to indicate the possible reasons for variations of two years.

- (i) Gross Profit Sales (ii) Selling Expenses Sales (iii) Administration Expenses: Sales

Solution:

Books of Nathan Trading Co.,			
RATIO	2002	2003	
	$\frac{1,28,000}{6,00,000} \times 100$	$\frac{1,52,000}{7,48,000} \times 100$	
(j) Gross Profit /Sales	=		
	=	21.33%	20.32%
	$\frac{22,000}{6,00,000} \times 100$	$\frac{28,000}{7,48,000} \times 100$	
(ii) Selling Expenses : Sales	=		
	=	3.66%	3.74%
	$\frac{38,000}{6,00,000} \times 100$	$\frac{38,000}{7,48,000} \times 100$	
(iii) Administration Expenses; Sales =	=		
	=	6.33%	5.08%

Reasons For Variation

(i) Gross Profit: Sales

Ratio of Gross Profit on sales has gone down by almost 1%. It may be due to the following :

(a) Cost of Sales (i.e. Opening Stock + Purchases - Closing Stock) has increased from Rs. 4, 72,000 in 2002 to Rs. 5,96,000 in 2003 i.e., by 26% while the sales have registered an increase of 24.7% only.

(b) Composition of Sales in 2002 may be different from that in 2002. Sales of products with margin of profit may be less and those with a lesser margin more.

(c) Basis of valuation of Closing Stock might be different from that of Opening Stock.

(d) Certain obsolete or damaged items of Closing Stock of 2003 might have been written off.

(ii) Selling Expenses: Sales

The ratio of Sales to Selling Expenses has slightly (by 8%) increased in 2002 as compared to 2001. This is due to the fact that while sales have increased by 2.47% the selling expenses have increased by 27.27%. In other words, the increase in selling expenses has been disproportionate to the increase in sales. This indicates the inefficiency of the sales department.

(iii) Administration Expenses: Sales

The ratio of administration expenses to sales has gone down in 2003 as compared to 2002 by 25%. This is due to the obvious reason that while the sales have increased by Rs. 1,48,000. Administration expenses have remained constant. This indicates greater efficiency of management.

Illustration: 10

Rearrange the following statements in a form suitable for analysis and calculate five ratios which are significant in analysing the financial trend of the business:

CONDENSED BALANCE SHEET

ASSETS	2002	2003
	Rs.	Rs.
Cash at Bank	15,380	26,020
Trade Debtors	11,260	11,710
Stock on hand	56,160	49,460
Fixed Assets less Depreciation.	2,17,200	2,19,810
Total Assets	3.00,000	3,07,000

Analysis of financial
statements accounts
ratios

NOTES

LIABILITY & CAPITAL		Rs.	Rs.
Creditors		20,000	16,000
Bills Payable		12,750	6,500
Debentures		1,00,000	1,00,000
Reserves &.Appropriation Account		67,250	84,500
Paid-up Capital		1,00,000	1,00,000
		3,00,000	3,07,000
SALES		1180,000	1,95,000
Note: Calculate ratios to nearest second decimal place.			
REARRANGED BALANCE SHEET			
		2002	2003
		Rs.	Rs.
Paid-up Capital		1,00,000	1,00,000
Reserves & Appropriation A/c		67,250	84,500
Shareholder's Fund		1,67,250	1,84,500
Add: Long term liability Debentures		1,00,000	1,00,000
Total Funds Employed		2,67,250	2,84,500
THIS IS REPRESENTED BY :			
Current Assets			
Cash at Bank		15,380	26,020
Trade Debtors		11,260	
	11,710		
Stock on hand		56,160	49,460
		82,800	87,190
Less : Current Liabilities			
Creditors		20,000	16,000
Bills Payable		12,750	6,500
		32,750	72,500
WORKING CAPITAL		50,050	64,690
Fixed Assets Less Depreciation		2,17,200	2,19,810
		2,67,250	2,84,500

Ratios significant in analyzing the financial trend to the business

	2002	2003
	Rs.	Rs.
1. Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$	$\frac{82,800}{32,750}$	$\frac{87,190}{22,500}$
	= 2.53	3.87
2. Ratio of Fixed Assets to Net worth = $\frac{\text{Fixed Assets}}{\text{Net Worth}}$	$\frac{2,17,200}{1,67,250}$	$\frac{2,19,810}{1,84,500}$
	= 1.30	1.19
3. Inventory Ratio = $\frac{\text{Proprietor's Ratio}}{\text{Total Assets}}$	$\frac{1,67,250}{3,00,000}$	$\frac{1,84,500}{3,07,000}$
	= .55	.60
4. Turnover of Debtors = $\frac{\text{Debtors}}{\text{Net Sales}} \times \text{Number of days in the year}$	$\frac{11,260}{1,80,000} \times 365$	$\frac{11,710}{1,95,000} \times 365$
	= 22.9	21.9
	Say 23 days	Say 22 days
5. Ratio of sales to Total Funds Employed = $\frac{\text{Sales}}{\text{Total Funds Employed}}$	$\frac{1,80,000}{2,67,250}$	$\frac{1,95,000}{2,84,500}$
	= .67	.69

Analysis of financial
statements accounts
ratios

NOTES

Illustration : 11

Fairwell Ltd., has been operating for two years. The most important facts are given below:

PROFIT AND LOSS ACCOUNT

For two years (2002 & 2003)

Dr.			Cr		
2002		2003	2002		2003
Rs.		Rs.	Rs.		Rs.
To interest on Mortgage Loan		2,400	4,800	By balance	b/d
14,000					
To Directors Remuneration		10,000	30,000	By profit	80,400
60,800					
To provision for taxation		34,000	13,000		
To reserve		10,000	10,000		
To balance transferred to		24,000	17,000		
Balance sheet					
		80,400	74,800	80,400	74,800
Rs. Rs.			Rs. Rs.		
Share Capital	1,00,000	1,00,000	Fixed Assets (- Dep)	2,08,000	1,98,000
Reserves	24,000	22,000	Stock	30,000	60,000
Mortgage Loan	1,10,000	1,00,000	Debtors	40,000	80,000
Current Liabilities	74,000	1,18,000	Bank	30,000	2,000
	3,08,000	3,40,000		3,08,000	3,40,000

You are told that the sales amounted to Rs. 6,00,000 in the first year and Rs. 5,00,000 in the second year.

Examine the details and analyse them in a manner which indicates the overall efficiency of the business and its financial position.

Solution

	Rs.	Rs.
1. PROFITS FOR 2 YEARS		
As per P&L A/C	80,400	60,800

Less;Director's Remuneration	10,000	30,000
Profit	70,400	30,800
2.SHARE HOLDERS FUNDS EMPLOYED		
Share Capital	1,00,000	1,00,000
Reserve	24,000	22,000
3.TOTAL FUNDS EMPLOYED		
Shareholder's Fund	1,24,000	1,22,000
Long-term liabilities	1,10,000	1,00,000
	2,34,000	2,22,000
4.CURRENT LIABILITIES	74,000	1,18,000
5,CURRENT ASSETS		
	Rs.	Rs.
Stock	30,000	60,000
Debtors	40,000	80,000
Bank	30,000	2,000
	1,00,000	1,42,000
6.FIXED ASSETS	2,08,000	1,98,000
1. Profit Earned		

The rate of return on capital(total funds employed) is as follows:

$$\begin{aligned} 2002 &= \frac{\text{Net Profit}}{\text{Total Funds Employed}} \times 100 = \frac{70,400}{2,34,000} \times 100 = 30\% \\ 2003 &= \frac{30,800}{2,22,000} \times 100 = 14\% \end{aligned}$$

[Note : Net profit minus Director's Remuneration].

There has been a marked decline (almost half) in the rate of profit earning, a matter which calls for further investigation.

2. The Solvency Position :

Whether or not Fairwell Ltd., is in a reasonably sound financial position can be said from the following two ratios:

(a)
$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

(b)
$$\frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2002 \text{ Current Ratio} = \frac{1,00,000}{74,000} = 1.35 : 1$$

$$2003 \text{ Current Ratio} = \frac{1,42,000}{1,18,000} = 1.20 : 1$$

In 2002, the current Ratio is 1.35 to 1 which, although not substantial, may be adequate. But in 2003 ratio is 1.20 to 1, a weakening in the solvency position. A ratio of 2:1 should be maintained as far as possible.

Debtors have increased to the extent of Rs. 40,000; this again is clearly a weakness. Sales divided by the debtor's figure shows:

*Analysis of financial
statements accounts
ratios*

NOTES

$$2002 \quad \frac{6,00,000}{40,000} = 1.5 \text{ to } 1$$

$$2002 \quad \frac{5,00,000}{80,000} = 6.25 \text{ to } 1$$

If all goods are sold on credit for payment within one month (30 days), the ratio should be in the region of 1.2 to 1. So the year 2003 balance cannot be satisfactory.

The lack of Cash at Bank in the year 2003 shows a definite deterioration in the financial position.

(d) The Quick Ratio which shows liquid assets over liquid liabilities, is shown below:

2002

$$\frac{70,000}{74,000} = 0.90 \text{ to } 1 \quad \frac{\text{Liquid Assets}}{\text{Liquid Liabilities}}$$

2003

$$\frac{82,000}{1,18,000} = 0.69 \text{ to } 1$$

In 2002 and 2003 the liquid assets are smaller than liquid liabilities showing that Rs. 40,000 and Rs.80,000 have to be found from somewhere. This indicates the inability of the company to meet its commitments. Steps should be taken to obtain additional cash.

Sales:

As indicated there has been a fall in Sales. The sales to total assets employed are as follows:

2002 $\frac{6,00,000}{3,08,000} = 1.94 \text{ to } 1$ (i.e. each Re. 1 invested produced Rs. 1.94 sales)

2003 $\frac{5,00,000}{3,40,000} = 1.47 \text{ to } 1$ (i.e, each Re. 1 invested produced Rs. 1.47 sales)

4. Capital Structure:

The capital gearing is not very sound. There is too much reliance on borrowing. From the balance sheet, the following facts emerge :

	2002	2003
	Rs.	Rs.
Shareholder's Assets	= 1,24,000	1,22,000
Fixed Assets	= 2,08,000	1,98,000

Even the fixed assets are not covered in both years by the shareholder's funds. Normally, they are expected to provide the fixed assets and also contribute some part of the working capital.

The position of the creditors is precarious, since, they contributed more than that of the shareholders.

Conclusion

Many more ratios could have been covered. In the interest of simplicity, this has not been done. Even so from what has been covered, it will be apparent that Fairwell Ltd., has not fared well and is in need of reorganisation. Naturally, some improvements can be expected from increasing sales and reducing stocks and debtors. However, a much more radical reorganisation is called for, in particular, it may be desirable to change the capital and payoff the whole or part of the loan covered by mortgage.

Illustration: 12

From the following ratios found from the accounts of a company and standard Ratios, make brief comments about financial management, Profitability etc., of the company:

S.NO.	RATIOS	ACTUAL	STANDARD
1	Current Ratio	5	2
2	Liquid Ratio	2	1
3	Proprietary Ratio (FA/PF)	4	67
4	Debtors velocity	40 days	60 days
5	Stock Turnover Ratio	7	12
6	Net Profit Ratio (to Net Worth)	5	12
7	Fixed Assets Turnover Ratio	4	6
8	Net Worth Turnover Ratio	10	15
9	Creditor's velocity	30 days	45 days
10	Gross Profit Ratio	25%	25%
11	Net Profit Ratio (to sales)	8%	12%

*Analysis of financial
statements accounts
ratios*

NOTES

Solution :

1. CURRENT RATIO:

The current ratio is much in excess of standard. So, the position is very good from the point of view of creditors. The excess in this case may be that the requirea amount is not invested in Fixed Assets. The company may have collected funds in excess of what it can utilise profitably.

2. LIQUID RATIO:

This indicates very comfortable position for creditors.

3. PROPRIETARY RATIO:

A low proportion is invested in fixed assets. That is why there was more than sufficient working capital and liquid resources as shown above.

4. DEBTOR'S VELOCITY:

It shows the efficiency of debt-collection. But. it may also mean undue restrictions on credit and a very cautious credit policy.

5. STOCK TURNOVER RATIO:

Compared with the standard the stock turnover ratio is very low. Business is very slow. It may be due to restricted credit policy as is evidenced from Debtor's Velocity.

6. NET PROFIT RATIO (to net worth) :

This is very low. The low stock turnover ratio is also responsible, for this. Moreover, it may be due to collections of capital in excess of what can be properly utilised. Dividend is also likely to be less.

7. FIXED ASSETS TURNOVER RATIO:

Fixed Assets compared with turnover (sales are much below the standard. It seems that the management prefers to have more liquid form to long-term investments.

8. NET WORTH TURNOVER RATIO:

The company is not having optimum business vis-a-vis capital.

9. CREDITOR'S VELOCITY:

This ratio compared with standard, shows that the payments are made earlier. Perhaps, this is possibly due to better liquid resources and working capital resources as evidenced from Current Ratio and Liquid Ratio.

10. GROSS PROFIT RATIO:

Standard percentage maintained.

11. NET PROFIT RATIO (to sales) :

While Gross Profit Ratio remains constant, the net profit ratio is much below the standard. It indicates that administrative expenses are higher in the current year.

Conclusion:

From the point of view of creditors, the position is very satisfactory. But the position is not good from the standpoint of proprietors. The earnings on proprietor fund being less, the shareholders can expect only a low dividend.

The financial management is not upto the expectation. There is under-trading compared with the capital. Too much cautious credit policy is being followed. Lack of investment in fixed assets is another pitfall. Actually, it is a case of over-capitalisation with respect to the capacity of management.

Illustration: 13

Make very brief comments from the following state of affairs of a company.

“Too much Fixed Assets”

“Current Assets fall short of Current Liabilities”

Solution:

The predominance of Fixed Assets as well as the Current Assets falling short of Current Liabilities. suggest that capital of the company is adequate for its needs.

The fact that Current assets fall short of current liabilities, suggests that the company is carrying on business with too much borrowed funds and its own capital is inadequate. This state of affairs has been brought about by its capital being sunk in fixed assets.

Illustration: 14

The Current Ratio of a company is 2:1 which of the following suggestions would improve the ratio, which would not change it;

- (a) To pay a current liability
- (b) To sell a motor car for cash at a slight loss
- (c) To borrow money for short time on interest bearing promissory note
- (d) To purchase stock for cash and
- (e) To give an interest bearing promote promissory note to a creditor to whom money was owed on current account.

Solution :

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The various suggestions mentioned in the question will affect the current ratio as stated below:

- (a) Suppose current assets are Rs. 20,000 and current liabilities are Rs. 10,000. Then

he current ratio will be $\frac{20,000}{10,000} = 2: 1$. If Rs. 1,000 has paid to the creditors the remaining current assets will be Rs. 19,000 and the current liabilities; Rs. 9,000; the ratio will be 2.1 : 1 instead of the previous 2. Therefore, the current ratio will improve.

NOTES

- (b) Motor car is not a current asset. The selling of it for cash even at a slight loss will increase the current asset (cash) and therefore, the current ratio will improve.
- (c) Borrowing money on interest bearing promissory note. Say for a term of less than one year will increase both current asset and current liabilities by the same amount. Therefore, the current ratio is bound to decline.
- (d) Purchasing stocks for cash will merely change the composition of current assets (cash & Stock) but not their total values. Therefore, it will not affect the current ratio.
- (e) Giving an interest bearing promissory note to creditor may for a term of less than one year merely means substitution of one current liability for another. The total amount of current liabilities remains the same. Therefore this will not change the current ratio.

Illustration : 15

(a) If Julle Co., Ltd's current Ratio is 4.5 to Acid Test Ratio is 3 to 1; Inventory is Rs. 30,000. What are its total current Liabilities?

Solution :

Current Ratio	=	4.5 : 1
Acid Test Ratio	=	3.0 : 1
Inventory	=	1.5: 1
	=	30,000: ?
		30,000: 20,000

Therefore the total current liability amounted to Rs. 20,000.

(b) If Baby Co., Ltd's total current liabilities are Rs. 50,000. Acid Test Ratio is 3 to 1; Inventory is Rs. 25,000. What are its total current Assets? There is no o/d.

Acid Test Ratio	=	3: 1
	=	1,50,000:50,000
Inventory	=	25,000
		1,75,000

(e) If X Co., Ltd's inventory is Rs. 30,000; total current liabilities are Rs. 60,000; Acid Test Ratio is 2 to 1, what is its current Ratio?

Solution:

Acid Test Ratio	=	2: 1
-----------------	---	------

	=	? : 60,000
	=	1,20,000 : 60,000
Inventory	=	30,000
Current Assets	=	1,50,000

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{1,50,000}{60,000}$$

$$= 15 : 6 = 2.5 : 1$$

Illustration 16

From the following information make out a statement of proprietor's Fund with as many details as possible.

(i) Current Ratio 2.5 (ii) Liquid Ratio 1.5 (iii) Proprietary Ratio (Fixed Assets / Proprietary funds) 0.75 (iv) Working Capital Rs. 60,000 (v) Reserve and Surplus Rs. 40,000 (vi) Bank overdraft Rs. 10,000 and (vii) There is no long-term loan or fictitious asset. **Solution :**

(i) Computation of current Liabilities:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = 2.5$$

Or 2.5 : 1

CA : CL

Current Assets – Current Liabilities = Working Capital

2.5 – 1 = Rs. 60,000

$$1.5 = \frac{60,000}{1.5}$$

Current Liabilities = Rs. 40,000

(Note : Bank overdraft is included in current Liabilities)

(ii) Computation of Current Assets

Current Assets – Current Liabilities = Working Capital

? – Rs. 40,000 = 60,000

Current Assets = Working Capital + Current Liabilities
= 60,000 + 40,000

Current Assets = Rs. 1,00,000

(iii) Computation of Liquid Liabilities

$$\begin{aligned}\text{Liquid Liabilities} &= \text{Current Liabilities} - \text{Bank O/D} \\ &= 40,000 - 10,000\end{aligned}$$

$$\text{Liquid Liabilities} = \text{Rs. } 30,000$$

(iv) Computation of Liquid Assets

$$\begin{aligned}\text{Liquid Ratio} &= \text{LA} : \text{LL} \\ &= 1.5 : 1 \\ &= ? : 30,000 \\ &= 45,000 : 30,000\end{aligned}$$

$$\text{Liquid Assets} = \text{Rs. } 45,000$$

(v) Computation of Stock

$$\begin{aligned}\text{Liquid Assets} &= \text{Current Assets} - \text{Stock} \\ \text{or Rs. } 45,000 &= 1,00,000 - ? \\ \text{or Stock} &= 1,00,000 - 45,000 \\ \text{Stock} &= \text{Rs. } 55,000\end{aligned}$$

(vi) Computation of Proprietor's Funds

According to the problem there is no long term liability. Therefore, the following relationship can be established :

$$\text{Proprietor's Funds} + \text{Current Liabilities} = \text{Fixed Assets} + \text{Current Asset}$$

Or

$$\text{Proprietors Ratio} - \text{Fixed Assets} = \text{Current Assets} - \text{Current Liabilities} = \text{Working Capital}$$

Or

Or

$$\begin{aligned}\text{Proprietary Ratio} &= \frac{\text{Fixed Assets}}{\text{Proprietors Funds}} = 0.75 : 1\end{aligned}$$

$$\text{Proprietary Funds} = \text{Fixed Assets} + \text{Working Capital}$$

$$\text{(Ratio) } 1 = 0.75 + 0.25$$

$$\text{Working Capital (0.25)} = 60,000$$

$$\text{P.F. (1.0)} = \text{Rs. } 2,40,000.$$

$$\text{Proprietor's Funds} = \text{Rs. } 2,40,000.$$

(vii) Computation of Fixed Assets

Analysis of financial
statements accounts
ratios

Proprietary Ratio

=

Fixed Assets

Proprietor's Funds

0.75

= 0.75 : 1

= FA : PF

= ? : 2,40,000

NOTES

Fixed Assets are U.75 times the Proprietors' Funds

Fixed Assets = 2,40,000 x 0.75 = Rs. 1,80,000

(viii) Computation of Share Capital

Share Capital = Proprietor's Fund - Reserve

= Rs. 2,40,000 - 40,000

Share Capital = Rs. 2,00,000

(ix) Statement of Proprietors' Funds

Proprietors' Funds	Rs.
Share Capital	2,00,000
Reserves & Surplus	40,000
	2,40,000

Investment of Funds

Rs.

Fixed Assets

1,80,000

Current Assets

Stock = 55,000

Liquid Assets = 45,000

1,00,000

Less : Current Liabilities

Rs.

Bank O/D	10,000
Creditors etc.,	30,000
	40,000
	60,000

2,40,000

Illustration : 17

From the following details prepare statement of Proprietors' Fund with as many details as possible:

1. Gross Profit Turnover Ratio 20 per cent
2. Debtors' Turnover Ratio 60 days
3. Stock Turnover Ratio 6 times
4. Creditor's Turnover Ratio 72 days
5. Fixed Assets Turnover Ratio 4
6. Capital Turnover Ratio 2

The Gross Profit was Rs. 60,000. Reserve and surplus amount to Rs.20,000. Closing stock was Rs 5,000 in excess of opening stock.

All purchases and sales are credit purchases and credit sales. The number of working days is 360.

1. Computation of credit sales

$$\text{G.P. Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 = 20$$

$$\text{Net Sales} = \frac{\text{Gross Profit}}{\text{G.P. Ratio}}$$

$$\text{Credit Sales} = \frac{60,000 \times 100}{20} = \text{Rs } 3,00,000$$

2. Computation of Debtors

$$\text{Debtor's Turnover Ratio} = \frac{\text{Debtors \& B/R}}{\text{Credit Sales}} \times \text{Number of Working days in the year}$$

$$\text{or 60 days} = \frac{\text{Debtors}}{3,00,000} \times 360$$

$$\text{Debtors \& B/R} = 3,00,000 \times \frac{60}{360} = \text{Rs. } 50,000$$

3. Computation of Closing Stock

Analysis of financial
statements accounts
ratios

NOTES

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

Or 6 = Sales - Gross Profit

$$3 = \frac{3,00,00 - 60,000}{\text{Opening stock plus Opening stock} + 5,000}$$

$$3 = \frac{2,40,000}{2 \text{ Opening Stock} + 5,000}$$

6 Opening Stock + 15,000 = 2,40,000

$$\text{Opening Stock} = \frac{2,40,000 - 15,000}{6} = \frac{2,25,000}{6}$$

= Rs. 37,500

Closing Stock = Rs. 37,500 + Rs. 5,000 = Rs. 42,500.

4. Computation of Creditors

$$\text{Creditor's Turnover} = \frac{\text{Creditors \& B/P}}{\text{Credit purchases}} \times \text{Number of working days in a year}$$

Credit purchases

$$72 \text{ days} = \frac{\text{Creditors \& B/P}}{2,45,000} \times 360$$

$$= \frac{72 \times 2,45,000}{360}$$

Creditors & B/P = Rs. 49,000

5. Computation of Fixed Assets

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

$$\text{or } 4 = \frac{3,00,000}{\text{Fixed Assets}}$$

$$\text{Fixed Assets} = \frac{3,00,000}{4} = \text{Rs. } 75,000$$

6. Computation of Proprietors Funds

In the absence of any long term liability

Proprietor's Funds = Fixed Assets + Current Assets – Current Liabilities

$$\text{Capital Turnover Ratio} = \frac{\text{Sales}}{\text{Capital}}$$

$$\text{Or } 2 = \frac{3,00,000}{\text{Capital}}$$

$$\text{Capital} = \frac{3,00,000}{2} = \text{Rs. } 1,50,000$$

Proprietors Funds = Share Capital + Reserves and Surplus

$$= 1,50,000 + 20,000 = \text{Rs. } 1,70,000$$

Proprietary Funds + Current Liabilities = Fixed Assets + Current Assets

$$1,70,000 + 49,000 = 75,000 + \text{C.A.}$$

$$\text{Current Assets} = 1,44,000$$

BALANCE SHEET OF....

As at....

STATEMENT OF PROPRIETORS' FUNDS

Proprietors' Funds :

Share Capital + Reserves

Rs. 1,70,000

Investment of Proprietors Fund :

Current Assets	1,44,000	
Less : Current Liabilities	49,000	
	95,000	
Add : Fixed Assets	75,000	Rs. 1,70,000

*Analysis of financial
statements accounts
ratios*

NOTES

Illustration : 18

You are given the following figures pertaining to a company

Current ratio 2.5.

Liquid ratio 1.5.

Net working capital Rs. 3,00,000.

Stock turnover ratio (cost of sales / closing stock) 6 times.

Gross Profit ratio 20%.

Fixed assets turnover ratio (on cost of sales) 2 times.

Average debt collection period 2 months.

Fixed assets / Shareholder's Net worth 0.80.

Reserves and surplus / capital 0.50.

No Bank, O/D

Draw up the balance sheet of the company.

Solution

1) Current Assets & Current Liabilities :

C. A. - C. L.	=	Working Capital
2.5 - 1	=	Rs. 3,00,000
i.e. 1.5	=	Rs. 3,00,000
1	=	Rs. 2,00,000
Current Assets	=	Rs. 5,00,000
Current Liabilities	=	Rs. 2,00,000

2) Liquid Assets :

$$\begin{aligned} \text{Liquid Ratio} &= \text{Liquid Assets} : \text{Liquid Liabilities} = 1.5 : 1 \\ 1 &= \text{Rs. 2,00,000 [Liquid Liabilities = Current Liabilities]} \end{aligned}$$

$$\text{Liquid Assets [1.5]} = \text{Rs. 3,00,000}$$

3) Stock :

$$\begin{aligned} \text{Current Assets - Liquid Assets} &= \text{Closing Stock} \\ \text{Rs. 5,00,000 - Rs. 3,00,000} &= \text{Rs. 2,00,000} \end{aligned}$$

4) Cost of Sales :

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Closing Stock}}$$

$$\text{i.e. } 6 = \frac{\text{Cost of Sales}}{\text{Rs. 2,00,000}}$$

$$\text{Cost of Sales} = \text{Rs. 2,00,000} \times 6 = \text{Rs. 12,00,000.}$$

$$\begin{aligned} 5) \text{ Sales} &= \text{Cost of Sales} + 20\% \text{ on turnover or } 25\% \text{ on Cost} \\ &= \text{Rs. 12,00,000} + \text{Rs. 3,00,000} = \text{Rs. 15,00,000} \end{aligned}$$

$$\begin{aligned} 6) \text{ Debtors} &= \text{Credit Sales} \times \text{Average Collection Period} \\ &= 15,00,000 \times 15\% = \text{Rs. 2,25,000} \end{aligned}$$

$$\begin{aligned} 7) \text{ Cash and Bank Balance} &= \text{Current Assets} - (\text{Stock} + \text{Debtors}) \\ &= \text{Rs. 5,00,000} - (\text{Rs. 2,00,000} + \text{Rs. 2,25,000}) \\ &= \text{Rs. 50,000} \end{aligned}$$

$$8) \text{ Fixed Turnover Ratio} = \frac{\text{Cost of Sales}}{\text{Fixed Assets}}$$

$$\text{Fixed Assets} = \frac{\text{Cost of Sales}}{\text{Fixed Assets Turnover Ratio}}$$

$$\text{i.e. } = \frac{\text{Rs. 12,00,000}}{2} = \text{Rs. 6,00,000}$$

9) Shareholders Net worth

$$\text{Shareholders Net worth} = \frac{\text{Fixed Assets}}{\text{Fixed Assets Turnover Ratio}} = .80$$

$$\text{Share holders Networth} = \frac{\text{Fixed Assets}}{\text{Fixed Assets Turnover Ratio}} = .80$$

$$= \frac{\text{Rs. 6,00,000}}{.80} = \text{Rs. 7,50,000}$$

10) Reserve + Capital	=	Shareholders Net worth
i.e., 0.5 + 1	=	Rs. 7,50,000
1.5	=	Rs. 7,50,000
1.5	=	Rs. 5,00,000
Capital	=	Rs. 5,00,000
Reserves	=	Rs. 2,50,000

$$\begin{aligned}
 11) \text{ Fixed Assets + Net Working Capital} &= \text{Net Worth + Long term Loans} \\
 \text{Rs. 6,00,000 + Rs. 3,00,000} &= \text{Rs. 7,50,000 + ?} \\
 \text{Long Term Loans} &= \text{Rs. 9,00,000 - Rs. 7,50,000} \\
 &= \text{Rs. 1,50,000}
 \end{aligned}$$

Illustration : 19

The following data relate to the financial statement of prosperous Ltd, for the year ended 31st December, 2003

Working Capital (Current) Ratio	-	2.5 to 1
Working Capital	-	Rs. 45.000
Acid Test Ratio	-	1.40 to 1
Inventory Turnover Ratio (based on average cost of opening and Closing inventory) - 5 times		
Gross Profit Ratio	-	40%
Earning per share	-	Re 1
Earning for the year as percentage of share capital	25%	
Debt collection period	-	38 days
Creditors velocity	-	54 days
Number of shares allotted. (Nominal value pe, share Rs. 5)	-	25,000
Fixed Assets Shareholders Equity	-	0.70
Operating Ratio (Operating Expenses : Sales)	-	90%

There are no deferred expenses, prepaid expenses, long -term liabilities and intangible assets. Opening Stock was less by Rs. 4,000 than closing stock.

Prepare Company's Profit and Loss Account for the year ended 31st December 2003 and Balance Sheet as on that date with as many details as possible.

Solution

PROFIT AND LOSS ACCOUNT

(For the year ended 31-12-2003)

	Rs.		Rs.
To Opening Stock	29,000	By Sales	
2,58,334			
To Purchases	1,59,000	By Closing Stock	33,000
To G.P. c/d	1,03,334		
	2,91,334		
2,91,334			
To Operating Expenses	77,501	By G.P. b/d	
1,03,334			
To Non-operating Expenses	833		
(Balancing figure)			
To Net Profit	25,000		
	1,03,334		1,03,334

BALANCE SHEET

(As on 31-12-2003)

LIABILITIES	Rs.	ASSETS	
Rs.			
Share Capital (25,000 Shares of Rs. 5 each Rs. 4 paid up)	1,00,000	Fixed Assets	1,05,000
P & L a/c	25,000	CURRENT ASSETS :	
33,000		Stock	
Reserves	25,000	Debtors	
25,833		Bank & Cash	16,167
CURRENT LIABILITIES :			
Creditors	23,850		75,000
Others	6,150		30,000
	1,80,000		1,80,000

WORKINGS:

Current Ratio	=	2.5 to 1	
Working Capital	=	$2.5 - 1 = 1.5 = 45,000$	$1 = 30,000$
Current Liabilities	=	$30,000 \times 1 = 30,000$	
Liquid Liabilities (CL)	=	30,000	
Liquid Assets	=	$30,000 \times 1.4 = 42,000$	(Acid Test Ratio = 1.4 : 1)
Stock	=	$C.A. - L.A. = 75,000 - 42,000 = 33,000$	
Opening Stock	=	$33,000 - 4,000 = 29,000$	
Average Stock	=	$= 31,000$	
2. Cost of Sales	=	$31,000 \times 5$	$= 1,55,000$
3. Gross Profit	=	$1,55,000 \times 40/60$	$= 1,03,334$
4. Sales	=	$\text{Cost of Sales} + \text{GP} (1,55,000 + 1,03,334) = 2,58,334$	
5. Purchases	=	$\text{Cost of Sales} + \text{Closing Stock} - \text{Opening Stock}$	
	=	$1,55,000 + 33,000 - 29,000 = 1,59,000$	
Total Operating Expenses	=	$2,58,334 \times 30/100$	$= 2,32,501$
6. P & L A/c Operating Expenses	=	$2,32,501 - 1,55,000$	$= 77,501$
7. Net Profit	=	$25,000 \times 1$	$= 25,000$
8. Shareholders Equity	=	Fixed Assets + Net Current Assets	
Equity - F. Assets	=	Net current assets	
1 - .7	=	45,000	
.3	=	45,000	
1	=	$45,000 \times 10/3$	$= 1,50,000$
9. Paid up Capital	=	$25,000 \times 100/25$	$= 1,00,000$
10. Reserves	=	$1,50,000 - 1,00,000 - 25,000$	$= 15,000$
11 Creditors	=	$1,59,000 \times 54/360$	$= 23,850$
12. Fixed Assets	=	$1,50,000 \times 0.7$	$= 1,05,000$
13. Debtors	=	$2,58,334 \times 36/360$	$= 25,333$

Illustration : 20

From the following details, you are required to prepare the Balance Sheet of the firm to which these details pertain :

Current Ratio	-	1.75
Liquid Ratio	-	1.25
Stock turnover Ratio (closing stock)	-	9

*Analysis of financial
statements accounts
ratios*

NOTES

Gross Profit Ratio	-	25%
Debt collection period	-	1½ months
Reserves and surplus to Capital	-	0.2
Turnover to fixed assets	-	1.2
Capital Gearing Ratio	-	0.6
Fixed Assets to Net worth	-	1.25
Sales for the year	-	Rs. 12,00,000

Solution :

1. Computation of Gross Profit :

$$\begin{aligned}\text{Gross Profit Ratio} &= (\text{Gross Profit} / \text{Sales}) \times 100 \\ \text{Gross Profit} &= \text{Sales} \times \text{G.P. Ratio} \\ &= 12,00,000 \times (25/100) \\ &= \text{Rs.} 3,00,000\end{aligned}$$

2. Computation of Closing Stock

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average Stock}}$$

$$9 = \frac{\text{Sales} - \text{Gross Profit}}{\text{Average (closing stock)}}$$

$$9 = \frac{\text{Rs.} 9,00,000}{\text{Closing stock}}$$

$$9 = \frac{9,00,000}{\text{closing stock}}$$

$$\text{Closing stock} = \frac{9,00,000}{9} = \text{Rs.} 1,00,000$$

3. Computation of Debtors

$$\text{Debtors Turnover Ratio} = \frac{\text{Debtors}}{\text{Credit sales}} \times \text{Number of months in the year}$$

*Analysis of financial
statements accounts
ratios*

NOTES

$$1 \frac{1}{2} \text{ months} = \frac{\text{Debtors}}{12,00,000} \times 12$$

$$\text{Debtors} \times \frac{12,00,000}{12} = \text{Rs. } 1,50,000$$

4. Computation of Fixed Assets

$$\text{Turnover to Fixed Assets Ratio} = \frac{\text{Cost of Sales}}{\text{Fixed Assets}}$$

$$1.2 = \frac{9,00,000}{\text{Fixed Assets}}$$

$$\text{Fixed Assets} = \frac{9,00,000}{1.2} = \text{Rs. } 7,50,000$$

5. Computation of Capital

$$\text{Fixed Assets to shareholders, Net worth} = \frac{\text{Fixed Assets}}{\text{Net worth}}$$

$$1.25 = \frac{7,50,000}{\text{Net worth}}$$

$$\text{Net worth} = \frac{7,50,000}{1.25} = \text{Rs. } 6,00,000$$

Reserves and Surplus to capital = 0.2

Net worth = Capital + Reserves and Surplus.

6,00,000 = 1 + 0.2

1.2 = 6,00,000

= 5,00,000

Capital	=	1	=	Rs.5,00,000
Reserve and Surplus	=	0.2	=	Rs. 1,00,000

6. Computation of Long term Liabilities

$$\text{Capital Gearing Ratio} = \frac{\text{Borrowed capital}}{\text{Owners capital}}$$

$$0.6 = \frac{\text{Borrowed capital}}{5,00,000}$$

$$\begin{aligned} \text{Borrowed capital or Long term Liabilities} &= 5,00,000 \times 0.6 \\ &= \text{RS. 3,00,000} \end{aligned}$$

Computation of Current Assets & Current Liabilities

Current Ratio	=	1.75	
Liquid Ratio	=	1.25	
Current Assets	=	Liquid Assets + Closing Stock	
1.75	=	1.25	+ 1,00,000
0.50	=	1,00,000	
Current Assets	=	1.75	= 3,50,000
Liquid Assets	=	1.25	= 2,50,000
Cash and Bank Balance	=	Liquid Assets - Debtors	
	=	2,50,000 - 1,50,000	
	=	Rs.1,00,000	
Current Liabilities	=	1	
	=	1 x 3,50,000/1.75	
	=	Rs.2,00,000	

Illustration: 21

Following are the ratio to the trading activities of National Traders Ltd.,
Debtor's velocity = 3 months
Stock velocity = 8 times
Creditor's velocity = 2 months
Gross profit ratio = 25 percent.

Gross profit for the year ended 31st December, 2003 amounts to Rs. 40,000. Closing stock of the year is Rs. 10,000 above the Opening stock. Bills receivable amount to Rs. 25,000 and Bills payable to Rs. 10,000.

*Analysis of financial
statements accounts
ratios*

NOTES

Find out: (a) Sales; (b) Sundry debtors; (c) Closing stock; and (d) Sundry creditors.

i) Sales

Gross Profit = Rs. 40,000

$$\text{Gross Profit Ratio} = 25\% = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

$$\text{Sales} = \frac{100}{25} \times 40,000 = \text{Rs. } 1,60,000$$

b) Sundry Debtors

$$\text{Debtors velocity} = \frac{\text{Debtors + Bills Receivable}}{\text{Credit Sales}} \times 12$$

$$3 = \frac{\text{Debtors + B/R}}{1,60,000} \times 12$$

$$\text{Debtors + B/R} = \frac{1,60,000 \times 3}{12} = 40,000$$

$$\begin{aligned} \text{Debtors} &= 40,000 - \text{B/R} \\ &= 40,000 - 25,000 \\ &= \text{Rs. } 15,000 \end{aligned}$$

d) Closing Stock

$$\text{Stock velocity} = \frac{\text{Cost of Sales}}{\text{Average Stock}} = 8$$

$$\begin{aligned} \text{Cost of Sales} &= \text{Sales} - \text{G.P} \\ &= 1,60,000 - 40,000 = \text{Rs. } 1,20,000 \end{aligned}$$

$$8 = \frac{1,20,000}{\text{Average Stock}}$$

$$\text{Average Stock} = \frac{1,20,000}{8}$$

$$= 15,000$$

$$\frac{\text{Opening stock} + \text{Closing stock}}{2} = 15,000$$

$$\text{Opening stock} + (\text{Opening Stock} + 10,000) = 15,000 \times 2$$

$$2 \text{ Opening stock} = 30,000 - 10,000$$

$$2 \text{ Opening Stock} = 20,000$$

$$\text{Opening Stock} = \frac{20,000}{2} = 10,000$$

$$\begin{aligned} \text{Closing Stock} &= 10,000 + \text{Opening Stock} \\ &= 10,000 + 10,000 \\ &= \text{Rs. } 20,000 \end{aligned}$$

c) Sundry Creditors

$$\text{Creditors velocity} = 2$$

$$= \frac{\text{Creditors} + \text{Bills Payable}}{\text{Purchases}} \times 12$$

$$\begin{aligned} \text{Purchases} &= \text{Cost of Sales} - \text{Opening Stock} + \text{Closing Stock} \\ &= 1,20,000 - 10,000 + 20,000 \\ &= \text{Rs. } 1,30,000 \end{aligned}$$

$$\text{Creditors and Bills Payable} = \frac{1,30,000 \times 2}{12}$$

$$= \text{Rs. } 21,667$$

$$\text{Creditors} = 21,650 - \text{Bills Payable}$$

$$= 21,650 - 10,000$$

$$= \text{Rs. } 11,650$$

2.4 KEY TERMS

- **Common Size Statements**

Figures reported in these statements are converted into percentage to some common base.

- **Financial Statement**

Basically it refers to two statements, such as profit and loss A/c and Balance sheet.

- **Accounting Ratios**

It is in the form of quotient of two numbers, usually extracted or based on the figures from financial statements. If it is interpreted some inner meaning of performance of a business can be understood.

- **Current assets**

Assets which also easily convertible into cash within a period of one year in the normal course of business.

- **Current liabilities**

Liabilities which will be met within a period of one year in the normal course of business.

2.5 SUMMARY

Importance of financial statements which are the main feature of accounting is properly dealt with in this unit.

With the help of various methods of analysis a student can have an insight into any financial statement which come across in their life. This chapter gives you a proper knowledge on understanding any given financial statement and also the efficiency and performance of the business it relates to.

2.6 ANSWERS TO CHECK YOUR PROGRESS

- | | | | | |
|----------------------------|------------|--------------|------------|------------|
| 1. a) True | 1 b) False | 1. c) False | 1. d) True | 1. e) True |
| 2. a) 2:1 | b) 1:1 | c) Liquidity | | |
| d) Debtors Turn over Ratio | | e) 72 Days | | |

2.7 QUESTIONS / EXERCISES

1. Discuss the role of Ratio Analysis as a tool and technique in Management Accounting.

2. What is Accounting Ratio? What are its advantages and disadvantages?
3. Describe any six accounting ratios and briefly explain their application
4. State the meaning of the expression "Return on Capital employed" and point out the advantages a business would derive from the use of this instrument.
5. Write notes on:
 - (a) Gearing of Capital (c) Aging of Accounts
 - (b) Trading on Equity (d) Ratio of Security
6. Describe with illustration on any three of the following:
 - (a) Gross Profit Ratio (d) Working Capital Ratio
 - (b) Net Profit Ratio (e) Current Ratio
 - (c) Stock Velocity Ratio (f) Net Cash flow
7. State the principles of financial statement analysis. What relationship would you examine to study :
 - (a) the capital structure
 - (b) the liquidity and
 - (c) the earning power of the business unit ?
8. Discuss the significance and limitations of the following with suitable examples :
 - (a) Inventory Turnover (c) Debt Collection
 - (b) Fixed assets Turnover (d) Trading on Equity
9. Explain the importance of the following ratios in managerial planning and control
 - (a) Debt -Equity Ratio (c) Earnings Per Share
 - (b) Fixed Asset Turnover Ratio (d) Rate of Return
10. Explain how each of the following would be determined
 - (a) 'The adequacy of a company to meet its current obligations
 - (b) The performance of the credit collection department
 - (c) The adequacy of protection to long-term creditors
 - (d) Whether operating expenses are in control
 - (e) Trading on Equity
- 11 Write short notes on :
 - (a) Aging of accounts (d) Dividend yield ratio
 - (b) P.E.R. Ratio (e) Cover for preference and Equity Dividends

(c) P .O.R. Ratio

12. From the following Balance Sheet of a company, as on 31st December 2003 you are required to: calculate (a) Solvency Ratio (b) Current Ratio.

BALANCE SHEET

As on 31 st December 2003

The following is the Balance Sheet of Meyur Trading Company Ltd , as on March,2003

Sales for the year Rs. 2,00,000

Calculate the following accounting ratios from the above data (a) Current Ratio

- (b) Acid Test Ratio
- (c) Proprietary Ratio
- (d) Debtors Turnover

14. Show whether or not the following concern is solvent

Y LIMITED
BALANCE SHEFT

(Vertical form)

	Rs.
Capital	2,00.000
Fixed Liabilities	1,00,000
Current Liabilities	50,000
	3, 50.000
Fixed Assets	3,20,000
Current Assets	30,000
	3,50,000

15. Mr. Ramanathan owns a business and gives the following Figures for two successive years.

	2002	2003
Turnover	Rs. 30,000	Rs. 60,000
Gross Profit	Rs. 7,500	Rs. 12,000

He speaks very high of his manager who has increased the turnover and profits and describes him as dynamically successful'. Do you agree with Mr. Ramanathan? If not, why?

*Analysis of financial
statements accounts
ratios*

NOTES

16. Assuming an excess of Current Assets over Current Liabilities, indicate the effect of the following upon the Current Ratio

- (a) Collection of an account receivable
- (b) Payment of an account payable
- (c) Acquisition of merchandise on account
- (d) Acquisition of merchandise for cash
- (e) Acquisition of machinery on account

17. A company made credit sales of REs.20,000 during the year. If the average collection period is 36 days and year is assumed to be of 360 days, Calculate:

- (i) debtors turnonver
- (ii) Average Debtors and
- (iii) Debtors at the end when debtors at the end are more than that in the beginning by Rs.4,000.

UNIT 3 FUNDS FLOW AND CASH FLOW ANALYSIS

*Funds Flow and Cash
Flow Analysis*

Structure

NOTES

- 3.0 Introduction
- 3.1 Unit objectives
- 3.2 Funds Flow analysis.
- 3.3 Cash Flow analysis.
- 3.4 Key terms
- 3.5 Summary
- 3.6 Answers to check your progress
- 3.7 Questions / Exercises.

3.0 INTRODUCTION

A cash flow statement is a statement which discloses the changes in cash position between the two periods. For example, a balance sheet, shows the balance of cash as on 31.3.2005 at Rs. 30, 000/- while the cash balance as per its latest balance sheet as on 31.3.2006 was Rs. 40, 000/-. Thus, there has been an inflow of Rs. 10, 000/- during a year's periods. The cash flow statement outlines the reasons for such inflows or outflows of cash.

The cash flow statement is an important planning tool in the hands of management. This helps the management in formulating plans for immediate future cash needs. A projected cash flow statement or a Cash Budget will help the management in estimating as to how much cash will be available at a particular point of time to meet obligations like payment to trade creditors, repayment of cash loans, dividends, etc. A proper planning of the cash resources will enable the management to make available sufficient cash whenever needed and invest surplus cash, if any in productive opportunities.

The term cash comprises cash on hand, demand deposits with the banks and includes cash equivalents. Due to various limitations of Funds flow statements, the cash flow statement has gained prominence and is used by the management as an important tool of financial analysis, planning and management.

3.1 UNIT OBJECTIVES

- Understand the meaning of cash flow statement
- Identify the sources and applications of cash
- Prepare a cash flow statement
- Understand and prepare funds flow statement
- Understand difference between cash flow statement and funds statement, their utility and limitations.

3.2 FUNDS FLOW ANALYSIS

The term ‘funds’ has been defined by different authors in different senses in different contexts.

(1) In the most basic sense, we think of ‘Funds’ as cash, since cash is the easiest form of expressing economic value and is readily convertible into goods and services. A business operation involves a great number of cash transactions. If business is operated strictly on cash basis, it will be very easy to trace the key commitments and recoveries over a period of time.

(2) Not all resources however, are committed or obtained on the basis of cash transactions. This introduces a degree of complexity into our analysis. Management has the discretion to grant or obtain credit. For example, if a business obtains trade credit from a supplier, it means that someone else’s funds or resources in effect are employed until repayment is made. Similarly if trade credit is granted to customers, its funds are effectively used by someone else. By these management decisions the economic values have been shifted. Therefore, the concept of funds should be interpreted to denote the changes in current assets and current liabilities.

(3) A financial aspect of all significant transactions between the business and outsiders, whether they affect ‘Cash’ or ‘Working Capital’ will be interpreted as “funds”.

‘Purchase of fixed assets in exchange for shares or debentures, gifts or subsidies, exchange of fixed assets etc., may not directly affect cash or working capital. This is somewhat a broader approach to the concept of ‘funds’ by interpreting in the sense of all financial resources purchasing or spending power or economic values.

Thus,

1. Some interpret funds as literal cash.
2. Others interpret funds as net working capital.
[i.e., Current Assets minus Current Liabilities]
3. A broader approach is to include all financial resources, or purchasing or spending power or economic values under the heading 'fund'.

In this lesson, however, the term, 'funds' has been used to mean net working capital and all the illustrations and questions in this lesson are based on this assumption.

The Funds Flow Analysis involves the preparation of two items. They are as follows:

1. Schedule of Changes in Working Capital and
2. Statement of Sources and Application of Funds

1. Schedule of changes in working capital

In order to measure the increase or decrease in the working capital over a period of time, it is necessary to prepare this schedule.

The first part of the Funds Flow Analysis is the Schedule of Changes in Working Capital. This schedule is prepared with the help of only current assets and current liabilities.

Compare each current asset in previous year with that in current year. Similarly, compare each current liability in the previous year with that in the current year. The difference is recorded 'for each individual current asset and current liability. This process will be repeated till all accounts relating to all current assets and current liabilities in the two Balance Sheets are gone through and differences are properly recorded. The two columns showing the changes in current assets and current liabilities are balanced. The balancing figure represent either an increase or decrease in working capital. It must be remembered that Schedule of changes in working capital is prepared only from accounts appearing in the Balance Sheets. There is no effect of additional information given in the problem. That additional information will affect the Statement of Sources & Application of Funds.

Hints to Students

Where there are no complications and hidden. transactions, a student can first prepare the Schedule of Changes in Working Capital and can know

NOTES

in advance the answer to be disclosed by the Statement of Sources & Application of Funds.

It is better to have a look at Current assets and Current Liabilities.

The term “Current Assets” is used to designate those assets which are continually on the move.

CURRENT ASSETS GENERALLY INCLUDE.

- | | |
|-------------------------|----------------------|
| 1. Cash -in hand | 5. Debtors. |
| 2. Cash -at- Bank | 6. Stock- in -trade |
| 2. Temporary Investment | 7.Prepaid Expenses |
| 4. Bills Receivable | 8.Outstanding income |

The term ‘Current’ `Liabilities is used to describe such obligation which must be paid in the very near future.

Current Liabilities Generally Include

- | | |
|-------------------------|-------------------------------|
| 1. Outstanding expenses | 4. Income received in advance |
| 2. Trade Creditors | 5. Bank Overdraft |
| 3. Bills Payable | |

Working Capital = Current Assets minus Current Liabilities

Some writers are of the opinion that Bank overdraft has a tendency to become more or less a permanent source of financing therefore, it need not be included among current liabilities.

However, at any time this facility can be cancelled by the bank. Keeping this point in mind, it is reasonable to include the Bank O/D in current liabilities. Therefore, we have always treated bank O/D as current liability in all our illustrations. The following illustration explains how to prepare a schedule of working capital movement.

Illustration: 1

From the following two balance sheets on December 31, 2002 and 2003, you are required to prepare a Schedule of Changes in Working Capital:

LIABILITIES	DEC., 31 2003 Rs.	DEC., 31 2002 Rs.	ASSETS	DEC., 31 2003 Rs.	DEC., 31 2002 Rs.
Share Capital	3,25,000	3,00,000	Land & Building	5,00,000	4,60,000
Profit & Loss A/C	1,20,000	1,00,000	Machinery	1,00,000	1,00,000
9% Debentures	2,00,000	2,00,000	Stock-in-Trade	1,10,000	80,000
Trade Creditors	98,000	75,000	Debtors	30,000	36,000
Outstanding Creditors	2,000	5,000	Cash	5,000	4,000
	7,45,000	6,80,000		7,45,000	6,80,000

Solution:

SCHEDULE OF CHANGES IN WORKING CAPITAL

(1)	DEC., 31 2003 (2) Rs.	DEC., 31 2002 (3) Rs.	CHANGES IN CURRENT ASSETS AND CURRENT LIABILITIES (4)	
			Dr. Rs.	Cr. Rs.
Current Assets				
Stock-in-trade	80,000	1,10,000	30,000	
Debtors	36,000	30,000		6,000
Cash	4,000	5,000	1,000	
	1,20,000	1,45,000		
Current Liabilities				
Trade Creditors	75,000	98,000		23,000
Outstanding Creditors	5,000	2,000	3,000	
	80,000	1,00,000	34,000	29,000
Working Capital (a-b)	40,000	45,000		
Increase in working capital	5,000			5,000
	45,000	45,000	34,000	34,000

Hints to Students

1. While preparing the schedule of changes in working capital, concentrate your attention on Current Assets and Current Liabilities.

2. An increase in current assets is recorded in Dr. column. (See Stock - in - trade)

A decrease in current assets is recorded on Cr. Column. (See Debtors)

3. An increase in Current Liabilities is recorded on Cr. Column. (See Trade creditors)

A decrease in current liabilities is recorded on Dr. column. (See outstanding crs.)

4. If the Working Capital at the end of the period (Rs. 45,000) is more than the Working Capital at the beginning (Rs. 40,000), the difference (Rs. 5,000) is expressed

as, increase in working Capital.

5. If the working capital at the end of the period is less than that at the commencement, the difference is expressed as Decrease in Working Capital or Release in Working Capital.

2. Sources & Application of Funds

As you are aware, the term funds have been used in a special sense to mean net working capital. Any financial event, which increases 'net working capital', is, by definition, a 'source' of funds and any such transaction resulting in the decrease of net working capital' is by definition, an 'application' of funds. For example, additional issue of shares involves, receipt of cash. It involves an increase of net working. Therefore it is a 'source' of funds. But a dividend paid in cash is an 'application' of funds. As payment being made in cash, it involves a reduction of 'net working capital'.

Issue of shares, issue of Debentures, share premium, Income from disposal of fixed assets are some of the sources of funds. Similarly the discharge of long-term liabilities like Debentures and Redeemable Preference Shares and acquisition of fixed assets and investments are some of the uses of funds.

Under this approach, acquisition of current assets and discharge of current liabilities are not uses of funds. Similarly, disposal of current assets and creation of current liabilities are not sources of funds.

An analysis of the major sources of funds in the past reveal what portion of the business concern's growth was financed internally and what portion externally. An analysis of the application of fund in the past reveals the imbalance in the use of funds. By such an analysis, the management can undertake appropriate corrective actions.

Concept of flow:

As defined earlier, use of funds will always reduce the net working capital, and similarly, an inflow of funds will always increase the net working capital. Since the term 'fund' has been used in special sense to mean net working capital, the 'flow of fund' can be said to have taken place only when the net working capital is affected.

The flow of funds in a business may be visualized as a continuous process. For every use of funds there must be an offsetting source. In a broad sense, the assets of a business represent the net uses of funds and its liabilities and net worth represent net assets.

Funds Flow Statement :

How the business is procuring and applying funds can be revealed by Funds Flow Statement. Robert Antony has described the Funds Flow statement as "Where got, where gone statement". What is the meaning of "where got and where gone"? The meaning is

Where got = Sources of funds

Where gone = Application of funds

Funds flow statement is a statement in summary form that indicates changes occurring in items of financial condition between two different balance sheet dates, showing from what sources, funds have been utilised during the period.

Various titles are used for the Funds Flow statement. They include the following:

1. Where got & Where gone statement.
2. Statement of sources & Application of Funds.
3. Statement of Derivation & Disposition of the Means of Operation
4. Statement of sources & Utilisation of Funds.
5. Statement of changes in financial position.
6. Statement of Financial changes.

7. Statement of sources & Uses of funds.

This kind of statement originated in the U.S.A., where a number of corporations included it in their annual report to stock-holders.

Uses of the Funds Flow statement

What is the necessity of preparing such a statement? We know, funds or working capital is like the blood of any business. The availability of the current amount of funds and its proper use in a business can hardly be over emphasised. Funds Flow Statement is one of the tools for managing favourably this working capital. This statement reveals the comparative position of working capital in the two balance sheet dates. As a top management report, it gives the reasons for the basic causes of the changes. But management can recommend the ways and means by which the position of the working capital can be improved. Thus the statement is able to present that information which is either available or not readily apparent from an analysis of other financial statements. That is, why, Perry Mason has expressed his view that the Funds Flow statement should be treated as a major financial statement and it should be presented in all annual reports of the corporations.

To make the above discussion more precise, we can quote Hector R. Anton. According to him, the main purposes of reporting Funds Flow Statement to share holders are

1. to help them understand the changes in assets and asset sources which are not readily evident in the Profit and Loss Account or Balance Sheet.
2. to point out the financial strengths and weaknesses of the business.
3. to reveal how the flow of funds have been managed.

Drawbacks of the Funds Flow statement

This statement does not tell whether any loss of working capital has unduly weakened financial position. Only an examination of the balance sheet at the end of the period will show the end effect of these changes. Therefore, this statement cannot replace the usual financial statements. In fact, the statement is intended to supplement, and not supplant, the conventional financial statements either in whole or in part.

Taken in conjunction with Ratio Analysis, the Funds Flow Analysis provides a rich source of information regarding possible managerial issues.

How to prepare a Funds Flow Statement

The period covered by Funds Flow Statement is usually one year although it may be two, three or more years. The data for the preparation of this statement is obtained from Balance sheets, supplemented by such other information from the accounts as may be needed. The statement of Sources and Application of Funds is prepared, only with the help of non-current assets and non-current liabilities.

Illustration: 2

From the following two balance sheets as on December 31 and , you are required to prepare statement of Sources and Application of funds.

LIABILITIES	DEC., 31 2003 Rs.	DEC., 31 2002 Rs.	ASSETS	DEC., 31 2003 Rs.	DEC., 31 2002 Rs.
Share Capital	3,25,000	3,00,000	Land & Building	5,00,000	4,60,000
Profit & Loss A/C	1,20,000	1,00,000	Machinery	1,00,000	1,00,000
9% Debentures	2,00,000	2,00,000	Stock-in-Trade	1,10,000	80,000
Trade Creditors	98,000	75,000	Debtors	30,000	36,000
Outstanding Creditors	2,000	5,000	Cash	5,000	4,000
	7,45,000	6,80,000		7,45,000	6,80,000

Solution

STATEMENT OF SOURCES & APPLICATION OF FUNDS

For the year ended 31st December

SOURCES	Rs.	APPLICATION	Rs.
Funds from Trading Operation (i.e., increase in profit)	20,000	Purchase of Land and Building	40,000
Issue of share capital	25,000	Increase in working capital	5,000
	45,000		45,000

NOTES

HINTS TO THE STUDENTS

Note:

- 1. It is customary for a company to show in the Balance sheet the relevant figures of the preceding year.
 - 2. The sources of funds can be.
 - (a) Funds, obtained from operations; and
 - (b) Other funds, such as money obtained by sale of fixed assets, investments issuing shares and debentures etc.
- The balance, after all applications are made is known as Working capital.
- 3. There is no prescribed form for the statement of source and application of Funds. The items are arranged and described in such a way as to show clearly the important financial events of the period. It can be presented in a 'T' form as above or as a single column form as shown in illustration No.5
 - 4. While preparing this statement concentrate your attention on non-current assets and non-current liabilities.

It is better to have a look at non-current Assets and 'non-current Liabilities.

NON-CURRENT LIABILITIES	NON-CURRENT ASSETS
1. Equity share capital	1. Goodwill
2. Preference Share Capital	2. Land
3. Redeemable Preference Shares	3. Building
4. Debentures	4. Plant & Machinery
5. Long-term Loans	5. Furniture & Fixtures
6. Shares Premium A/c	6. Long- term Investments
7. Shares Forfeited A/c	7. Trade Marks
8. P & L A/c (Cr) Balance	8. Preliminary Expenses
9. Provisions for Depreciation	9. Discount on issue of shares &
Debentures	
10. Capital Reserve	10. Deferred Revenue Expenditure
like Advertisement cost etc.	
11. Appropriation of Profits etc., [Proposed Dividend, Provision for Taxation, dividend Equalisation Fund, Insurance Fund, General Reserve; Capital Redemption	11. P & L A/c (Dr.) Balance

Reserve. Etc.,]

Illustration : 3

Given the following figures

Dr. BALANCES	31.12.2002	31.12.2003	Cr. BALANCES	31.12.2002	31.12.2003
Cash	130	40	Creditors	319	365
Debtors	100	160	Provision for dividend	---	---
Stock	235	253	Equity capital	3,600	4,000
Land	540	1,020	P & L A/C	100	329
Plant	2,804	3,544	Debentures		535
Furniture	210	210			
	4,019	5,229		4,019	5,229

Prepare statement of sources and Application of funds and a statement showing the movement of working capital.

Solution

[Rs. In'000]	2002	2003	Moving Working Capital	
			Dr.	Cr
Current assets	Rs.	Rs.	Rs.	Rs.
Cash	130	40		90
Debtors	100	160	60	
Stock	235	255	20	
Total of C.A (A)	465	455		
Current Liabilities				
Creditors	319	365		46
Total of C.L (B)	319	365		
Working Capital (A -B)	146	90		
Decrease or Release in working capital		56	56	
	146	146	136	136

NOTES

If students like they can take all the items of Balance sheet (not only current Assets & Current Liabilities but also fixed Assets & fixed Liabilities including capital & Reserves and add tow more columns for the changes in fixed assets and fixed Liabilities. In such a case, the new columns will throw the same difference of Rs. 56 (in L ‘000). But that is not necessary.

STATEMENT OF SOURCES & APPLICATION OF FUNDS

For the year ended 31st Dec. 2003

(Rs. In ‘000)

Sources	Rs.	Application	Rs.
Funds from trading operations (including Provision for dividend)	229	Purchase of Land	480
Issue of equity capital	400	Purchase of Plant	740
Issue of Debentures	535		
	1,164		
Decrease in working capital as per statement showing the movement of working capital	56		
	1,220		1,220

Illustration 4

Summarized Balance Sheets of XYZ Ltd., as on 31st March 2002 and 31st March 2003.

LIABILITIES	2003 Rs.	2002 Rs.	ASSETS	2003 Rs.	2002 Rs.
8% Redeemable Preference Shares	1,00,000	---	Fixed Assets	4,00,000	3,10,000
			Less Depreciation	1,50,000	1,10,000
Equity shares	4,00,00	4,00,00	Total	2,50,000	2,00,000
General Reserve	20,000	20,000	Current Assets		
Profit & Loss A/C	12,000	10,000	Marketable Securities	---	1,00,000
9% Debentures	70,000	60,000	Sundry Debtors	2,40,000	2,00,000
Current Liabilities					
Trade creditors	2,00,000	2,10,000	Stock in trade	3,50,000	3,00,000
Bank overdraft	58,000	1,15,000	Prepaid Expense	5,000	3,000
			Cash at Bank	15,000	12,000
	8,60,000	8,15,000		8,60,000	8,15,000

You are required to prepare

- (a) A statement showing the changes in the working capital and
- (b) A Statement of Sources and uses of funds.

Solution

	March 31 2002	March 31 2003	CHANGES IN CURRENT ASSETS AND CURRENT LIABILITIES	
			Dr.	Cr
Current assets	Rs.	Rs.	Rs.	Rs.
Marketable Securities	1,00,000	---	---	1,00,000
Sundry Debtors	2,00,000	2,40,000	40,000	---
Stock in trade	3,00,000	3,50,000	50,000	---
Prepaid Expenses	3,000	5,000	2,000	---
Cash at Bank	12,000	15,000	3,000	---
(a) Total of C.A	6,15,000	6,10,000		
Current Liabilities				
Trade creditors	2,10,000	2,00,000	10,000	
Bank over draft	1,15,000	58,000	57,000	
(b) Total of C.L	3,25,000	2,58,000		
Working Capital (a-b)	2,90,000	3,52,000		
Increase in working capital	62,000			62,000
	3,52,000	3,52,000	1,62,000	1,62,000

Hints

1. Depreciation is “rentention” of profit. This to say, out of the profits of the business, we are setting aside a portion of current year’s profit for the replacement of the said asset, in the year of replacement.

NOTES

Compare the depreciation figure (RS. 1,50,000 and Rs. 1,10,000).
The difference is Rs. 40,000.

- 2. In order to determine income form operations, Depreciation is added back to Net profit. Instead of showing two items, such as (1) Depreciation; and (2) Increase in profits we can use one term, which is known as Funds from Trading Operations Rs. 42,000.
- 3. We have to compare assets at gross figure (Rs. 4,00,000 and Rs. 3,10,000) instead of net figure. It is always better that all provisions (which have been shown by deducting from assets in the balance sheet) are on the liability side.

Illustration : 5

From the following information prepare a statement of sources and Application of Funds for the year ended 30th June

- (a) Increase in working capitals during the year Rs. 4,000
- (b) Net profit for Rs. 10,750
- (c) Depreciation of fixed assets charged to profit and Loss Account Rs. 1,750.
- (d) Dividend paid in Rs. 3,500.
- (e) Rs. 10,000 share capital was issued in payment of Debentures and Rs. 5,000 share capital was issued for cash
- (f) Machinery was purchased for Rs. 30,000 in exchange for investment Rs. 5000, loan on mortgage Rs. 15,000 and cash Rs. 10,000.

Solution

STATEMENT OF SOURCES & APPLICATION OF FUNDS

For the year ended 30th June

SOURCES :	Rs.	
	Rs.	
Funds from Trading Operation		12,500
[Net Profit + Depreciation]		
Issue of share capital for cash	5, 000	17,500
APPLICATION :		
Payment of Dividend	3,500	
Purchase of Machinery for cash		10,000

Increase in working capital	4,000	17,500
-----------------------------	-------	--------

Hints :

1. A decrease in working capital is best shown in the statement of sources and application of funds by reversing the usual sequence of statement as illustrated below,

APPLICATION

XXX	
XXX	
	XXXX

SOURCES:

	XXX	
	XXX	
Decrease in working Capital	XXX	
		XXXX

2. When share capital is issued in payment of Debentures, it will not affect the Statement of Sources & Application of Funds. But when it is issued for cash, it represents an application of fund.

3. Machinery Purchased in exchange for investment and loan on mortgage will not affect the statement. When it is purchased for cash, it presents an application of fund.

Students should give special attention to the following matters while preparing Funds Flow Statement of sources & Application of Funds.

1. Changes in Current Assets & Current Liabilities

All changes in current assets and current liabilities between the dates of two balance sheets are considered in the schedule of changes in Working Capital. Therefore, these changes need not be dealt with separately in the Statement of Sources & Application of Funds.

2. Changes in Non-Current Assets & Non-Current Liabilities

Only those changes in non-current assets and non-current liabilities (i.e. Fixed Assets and Fixed Liabilities), which are off set by changes in working capital should be shown in the statement of Sources & Application of Funds.

Difference in the values of fixed assets between the dates of two balance sheets,, would represent either sale or purchase thereof. The figure of

purchase should be treated as an application of funds and the actual sale proceeds (without considering profit or loss on sales) should be taken as a source of funds.

Difference in the values of fixed liabilities between the date of two balance sheets would represent either additional increase or repayment thereof. The same will be shown in the Funds Flow statement.

(Note: Students are advised to construct rough Ledger Accounts for such items in which changes are noted. Information such as purchases, sale, depreciation, loss or profit may be revealed.)

3. Investments

When surplus funds are temporarily invested in marketable securities they will be treated as Current Assets. Any change will be automatically adjusted through the schedule of changes in working, capital. Therefore, no separate treatment would be required in the Statement of Sources & Application of Funds.

If investments are of a permanent nature they should be treated as Fixed Assets. Any change may represent either purchase or sale of investments. Actual sale proceeds (without considering Profit or loss on sale) should be taken as a source of funds and the figure of purchase as an application of funds.

(Note: If it is simply stated as 'investment' in the problem, we can take it as current asset).

4. Provision for Doubtful Debts

This provision is built up to guard against the anticipated losses on Debtors.

Provision for Doubtful Debts may be treated as non-current liability (like an internal reserve). A separate account is prepared for it. The balancing figure (i.e. the amount transferred to the Adjusted Profit & Loss A/c) should be added back to the net profit or deducted from the net loss to find out funds from trading operations.

Some authors treat the provision for doubtful debts as a current liability. In that case, the debtors must be shown at gross figure under current assets and the provision under current liabilities. Any changes in these

accounts will be automatically adjusted in the Schedule of Changes in Working Capital.

(Note: The schedule of changes in the working capital will be different under these two methods. In our lesson first method has been adopted. Students are advised to follow the same by treating the item as a non-current liability.)

Similar treatment should be given if you come across with any other provision such as provision for loss of stock or allowance for inventory loss.

5. Provision for Taxation

This item may be similarly treated in two ways in the Fund Flow statement.

1) Provision for Taxation made during the year may be treated as current liability. If this is the treatment then provision of taxation made during the year is not used for adjusting the net profit made during the year or calculating the income from operations. As such tax paid during the year is not treated as an Application of Funds.

2) Provision for taxation may be treated as internal appropriation and thus non-current liability. Then, it will be used for adjusting the Net Profit made during the year and tax paid during the year is treated as an Application of funds.

(Note: It has been treated as a non-current liability in our lessons)

6. Proposed Dividend

There are the same two methods of treating this item in the Funds Flow statement.

1. Proposed Dividend may be treated as a current liability. Then it will not be used for adjusting the Net Profit made during the year for calculating the income from operations.

2. Proposed Dividend may be treated as a non-current liability. In that case dividend paid during the year is shown as an Application of Funds and current year proposal will be adjusted in the 'funds from operation'.

(Note: It has been treated as a non-current liability in our lessons.)

It must be carefully noted that it is the payment of dividend (and not the declaration of dividend), which reduces the working capital. The declaration of dividend does not affect the working capital. Because, it is

mere appropriation of funds. In order to know income from operations such proposed dividend should be added back to the net profit.

How to arrive at funds from operation

To determine the sources of Funds from operations certain special items are to be added back to Net Profit. In determining the sources of funds from operation certain items, which have already been debited to Profit & Loss A/c, are added back to the figure of Net Profit for the year. But the question arises, as to which of the several items already debited to Profit & Loss a/c are to be added back. Similarly certain items, which have been already credited to profit & Loss A/c, will be deducted from the figure of Net Profit.

The solution would depend upon the answers to the following two key questions.

1. Did the item taken by itself result in
(a) a change in any current Asset or Current Liability or (b) flow of cash?
2. Is this item a trading charge or trading loss?

If the answer to the above questions is in the affirmative the item should not be added back. On the other hand, if the answer to any these questions is in the, negative the item should be added back.

1. Goodwill written off :

Goodwill is an intangible asset. The amount written off as goodwill is shown as an expense in P & L A/c. It is only a book entry. It does not involve outflow of funds. It is added back to the figure of Net profit.

2. Preliminary Expenses written off :

The writing off of preliminary expenses neither affects any current liability nor it constitutes a trading charge. It is only a book entry. It does not involve use of funds. It will be added back to Net Profit because; both the key questions are answered in the negative.

The same treatment should be given in case of amortization of advertisement suspense A/c, Patent Rights, Trade Marks, Discount on issue of Shares and Debentures etc.

3. Depreciation Provided :

Fixed Assets are written off by means of a depreciation charge, which is debited in the P & L A/c. The charge of depreciation is only a book entry.

It does not involve use of resources. It does not affect any current assets or current liability. It only affects fixed assets. Although, depreciation is a trading charge, it will be added back to the Net Profit. If it is not added back to Net Profit, the funds from operations will not be the true figure.

4. Transfer to General Reserve, Divident Equalisation Reserve, Sinking fund, Asset Replacement Fund, and Debenture Redemption Fund or Any other Reserves :

They simply represent contribution towards such items. These transfers constitute an appropriation of profit and not a trading charge against profits. Further, they do not involve a change in any current asset or current liability. These contributions are added back to Net Profit given at the end of the year.

5. Loss or Gain on Sale on Non Current Assets :

Any profit on the sale of non-current assets (like Land and Buildings, Plant & Machinery, Long-term Investments, etc.,) must be deducted from Net profit.

Similarly, any loss on sale of non current assets (like Land & Building, Plant & Machinery, Long-term investment etc.,) must be added to Net Profit.

6. Dividends Received or Receivable :

They result in a current asset (Cash or outstanding Debtors) but do not constitute a trading income. Hence they will be taken as a separate item of source in the statement of Sources & Applications of Funds.

7. Retransfer of Excess Provision for Taxation :

This merely involves a book keeping entry. It does not bring about a change in any current asset or current liability. It does not constitute trading income. Hence, it will be deducted from net profit.

Determination of Funds from Operation or Loss in Operation in case of Net Loss

If the profit & Loss A/c for the year shows net Loss, it does not necessarily mean that funds of corresponding value have been lost in operations. If the total value of items to be added back (expenses & losses, written off and transfers to reserve etc.) exceeds the total of net loss plus

NOTES

items to be deducted (dividend etc.) the difference would represent ‘funds provided by operations’.

On the other hand, if the total value of items to be added back is less than the total of the Net Loss plus items to be deducted, the difference would reflect ‘Funds lost in operations’. The funds so lost may be shown under the heading ‘Application of Funds’ in the statement of Sources & Application of Funds. Alternatively, they may be shown as a deduction from funds provided by other sources under the heading ‘sources’.

Hiddne Transactions

Sometimes, students are confronted with a situation where they are unable to locate easily transactions taking place in the business. For example, if balance sheets on two different dates show Machinery Account at Rs. 1,00,000 and Rs. 1,10,000 respectively and as information it is given that depreciation on Machinery has been provided to the extent of Rs.20,000.

Then, hidden information can be revealed by preparing Machinery Account as shown under.

MACHINERY A/C

Rs.		Rs.
To opening Balance	1,00,000	By Depreciation
		20,000
To cash	Purchases of	30,000
		By closing Balance
		1,10,000
Machinery (Balancing figure)		
APPLICATION OF FUNDS		
	1,30,000	1,30,000

From the above account, student can now conclude, that there is a purchase of Machinery of Rs. 30,000 (not Rs.10,000 which is the difference between Rs.1,00,000). Therefore there is an Application of the Funds to the extent of Rs.30,000.

Let it be assumed that the opening balance in the above example is Rs. 1,60,000. Then the Machinery A/c would appear accordingly.

Following technique is suggested for the construction of the Funds flow statement.

1. Prepare a schedule of changes in working capital
2. Before preparing statement of Sources & Application of Funds, prepare those ledger accounts, which contain hidden transactions.

3. FUNDS FROM TRADING OPERATIONS:	RS.
Net profit	XX
ADD:	
(a) Depreciation on fixed Assets	XXX
(b) Depreciation on wasting Assets	XXX
(c) Amortization on intangible Assets (like Goodwill)	XXX
(d) Deferred Revenue Expenses charged from Revenue	XXX
(e) Loss on Sale of Non-current Assets	XXX
	XXXX
DEDUCT:	
Gain on sale of Non-current assets	XXX
Funds from Trading operations	XXXX
4. Funds from Sources other than trading operation:	
(a) sale of Non-current Assets	XXX
(b) Issue of long-term loans Like Debentures	XXX
(c) Issue of share capital	XXX
5. Application of Funds :	
(a) Purchase of Non-current Assets,	XXX
(b) Redemption of debentures, Preference shares etc.	XXX
(c) Payment of cash Dividend	XXX
(d) Payment of Tax	XXX

6. Record the increase or decrease in working capital as per schedule of changes in working capital

Alternatively:
PROFORMA OF ADJUSTED PROFIT & LOSS A/c

To Depreciation written off	XXX	By operating Balance	XXX
To provision for taxation	XXX	By Dividend already credited to P & L A/c	XXX
To proposed dividend	XXX		XXX
To preliminary Expenses written off	XXX	(Non trading income)	XXX
To Goodwill written off	XXX		XXX
To discount on issue of shares and Debenture	XXX	By over -provision for taxation written back	XXX
To Deferred Revenue Expenses already charged	XXX	By Funds from Trading operations (Balancing figure)	XXX
To Transfer to General Reserve	XXX		
To Transfer to sinking fund etc.	XXX		
To Loss on sale of Fixed Assets	XXX		
To closing Balance	XXX		

A proforma of statement of sources and uses of Funds is given below:

STATEMENT OF SOURCES & USES OF FUNDS

For the year ended...

SOURCES	Rs.	USES	Rs.
1. Funds from Trading Operations	xxx	1. Redemption of Redeemable preference shares	xxx
2. Issue of shares	xxx	2. Redemption of Debentures	xxx
3. Issue of Debentures	xxx	3. Repayment of loan	xxx
4. Loan obtained (Long – term)	xxx	4. Purchase of Investments and other fixed Assets	xxx
5. Sale of Investment and other fixed Assets	xxx	5. Payment of dividend	xxx
6. Non – trading income	xxx	6. Non – trading expenses	xxx
		7. Increase in working capital	xxx

Note:

1. Funds lost from ‘Trading Operation’s will be shown under the heading
uses’.

2. Decrease (or Release) in working capital will be shown under the heading 'Sources'.

Funds Flow and Cash Flow Analysis

Illustration: 6

From the following data, prepare a schedule of changes in working capital and a statement of Sources and Uses of funds.

INCOME STATEMENT

For the year ending 31st December
(Rs. in '000)

	Rs.
SALES	600
Less Cost of good sold	337
Gross margin on sale	263
LESS OPERATING EXPENSES:	
Depreciation on Machinery	50
Depreciation on Buildings	80
Other expenses	100
	230
Net Margin on sales	33
Add Gain on sale of long term investments	12
Total	45
Less: Loss on sale of Machinery	
(Proceeds from sale of Machinery Rs.15)	5
Net Income	40

ABILITIES	Rs.	Rs.	ASSETS	Rs.	Rs.
mulated	275	150	Cash	315	
eciation					
itors	100	75	Marketable Securities	106	
payable	50	25	Debtors	150	
ntures	500	250	Long-term	70	
			investments		
y share	550	400	Inventories	95	
al					
ium on shares	60	325	Machinery	500	
ned Earnings	336		Buildings	600	
			Land	35	
	1,871	1,225		1,871	1,225

NOTES

NOTES

Solution :

CHANGES IN CURRENT ASSETS AND CURRENT LIABILITIES				
Current Assets:	Rs.	Rs.	Dr. Rs.	Cr. Rs.
Cash	285	315	30	
Marketable securities	50	106	56	
Debtors	125	150	25	
Inventories	70	95	25	
Total of C.A	530	666		
Current Liabilities				
Creditors	75	100		25
Bills Payable	25	50		25
Total of C.L	100	150		
Working Capital	430	516		86
Increase in working Capital	86			
	516	516	136	136

Working

1. Income from operation

Net margin from operation	33
Add Depreciation on Machinery	50
Depreciation on Building	80
	163

(or sales minus cost of goods sold minus other expenses Rs. 600 – 337 – 100 = Rs. 163)

ACCUMULATED DEPRECIATION A/C

	Rs.		Rs.
To closing Balance	275	By opening Balance	150
To Machinery A/c	5	By P & L A/c	50
(Depreciation on Machinery sold out – Balancing figure		(Depreciation on Machinery)	
	280		280

2. Depreciation on Machinery Rs. 5.

MACHINERY A/C

	Rs.		Rs.
To opening Balance	350	By Depreciation	5
(Use).To purchase of machinery	175	By loss on sale (P & L A/c)	5
[Balancing figure]			
		By cash (on sale of machinery)	15
		By closing balance	500
	525		525

3. Sale of Machinery Rs. 15.

4. Purchase of machinery Rs. 175.

It is better to prepare long term investments A/c

LONG TERM INVESTMENTS A/c

	Rs.		Rs.
To opening balance	110	By closing Balance	70
To gain on sale (P & L a/c)	12	By cash sale of investment	52 (source)
		(Balancing figures)	
	122		122

Sale of long – term investments Rs. 52

Retained earnings – opening balance	325
Add Net Income as per income statement	40
	365
Less Retained Earnings at end	336
Balance represents either dividend or tax paid	29

STATEMENT OF SOURCES & USES OF FUNDS

For the year ended 31st December

SOURCES		Rs. (in '000)
FUNDS FROM		
Trading operations		163
Sale of machinery		15
Sale of investment		52
Issue of equity shares		150
Share premium		60
Issue of debentures		250
		690
USES		
Purchase of Machinery	175	
Purchase of Building	400	
Payment of dividend / tax	29	604
Net increase in working capital		86

Illustration : 7

The summarized Balance sheets of G. Ltd as 31st December and are as follows:

LIABILITIES	2002 Rs.	2003 Rs.	ASSETS	2002 Rs.	2003 Rs.
Share capital	450	450	Fixed Assets	400	320
General Reserve	300	310	Non – current investments	50	60
Profit & Loss A/c	56	68			210
Creditors	168	134	Stock	240	455
Provision for taxation	75	10	Debtors	210	197
Mortgage Loan	--	270	Cash	149	
	1,049	1,242		1,049	1,242

- Investments costing Rs. 8,000 were sold during the year 2003 for Rs. 8,500
- Provisions for taxation made during the year was Rs. 9,000.
- During the year a part of the fixed asset costing Rs. 10,000 was sold for Rs. 12,000. The profit was included in Profit and Loss account.
- Dividend paid during the year amounted Rs. 40,000.

Prepare schedule of changes in working capital and a statement of sources and application funds for the year ended 31st December 2003.

Solution

G. Ltd

1. SCHEDULE OF CHANGES IN WORKING CAPITAL

(Rs. In '000)

	2002	2003	CHANGES IN C.A AND C.L	
Current Assets:	Rs.	Rs.	Dr. Rs.	Cr. Rs.
Stock	240	210	---	30
Debtors	210	455	245	
Cash	149	197	48	
Total of C.A	599	862		
CURRENT LIABILITIES				
Creditors	168	134	34	
Total of C.L	168	134		
Working capital	431	728		
Increase in Working capital	297			297
	728	728	327	327

(Workings Rs. In '000)

NOTES

INVESTMENT A/c

	Rs.		Rs.
To opening balance	50	By closing Balance	320
To adjusted P & L a/c (profit on sale)	0.5	By cash (Sales)	12
To cash purchases – Balancing figure	18		
	68.5		68.5

FIXED ASSETS A/c

	Rs.		Rs.
To opening balance	400	By closing Balance	320
To Adjusted P & L A/c (profit on sale)	2	By cash (Sales)	12
		By Adjusted P & L A/c Depreciation (Balancing figure)	70
	402		402

ADJUSTED P & L A/c

	Rs.		Rs.
To provision for tax	9	By opening balance	56
To depreciation of fixed Assets	70	By (profit on) investments	0.5
To proposed dividend	40	By (profit on) fixed Assets	2
To Tr. To general Reserve	10	By income from operation balancing figure	138.5
To closing balance	68		
	197		197

2. STATEMENT OF SOURCES & USES OF FUNDS

For the year of ending 31st December 2003

NOTES

(Rs. In ‘000)

SOURCES	Rs.	USES	Rs.
Funds from (income from)	138.5	Payment of tax	74
Trading operations			
Funds from sale of investments	8.5	Payment of dividend	40
Funds from sale of fixed Assets	12.0	Purchase of investment	18
Funds from mortgage loan	270.0	Increase in working capital as per schedule of chage	297
	429.0		429.0

Illustration : 8

From the following Balance sheet of M/s Alpha Ltd, make out-

- 1. Schedule of changes in the working capital; and
- 2. Statement of sources and application of funds

Balance Sheet of M/s Alpha Ltd.,

(Rs. in ‘000)

LIABILITIES	March 2002 Rs.	March 2003 Rs.	ASSETS	March 2002 Rs.	March 2003 Rs.
Equity share capital	300	400	Good will	100	80
8% Redeemable preference shares			Land	200	170
Capital Reserve	---	20	Plant	80	200
General Reserve	40	50	Investment	20	30
Profit & Loss A/c	30	48	S. Debtors	140	170
Proposed dividend	42	50	Stock in trade	77	109
S. Creditors	25	47	Bills Receivable	20	30
Bills payable	20	16	Cash in hand	15	10
Liability for expenses	30	36	Cash at Bank	10	8
Provision for taxation	40	50	Preliminary expenses	15	10
	677	817		677	817

Note:

- 1. A machine has been sold for Rs. 10,000. The written down value of the machine was Rs. 2,000. Depreciation of Rs. 10,000 is charged on plant in.
- 2. A piece of land had been sold out in and the profit on sale has been credited to capital Reserve.
- 3. The investments are trade investments. Rs. 3,000 by way of dividend was received including Rs. 1,000 from pre acquisition dividend, which has been credited to investment Account.
- 4. An interim dividend of Rs. 20,000 has been paid in.

Solution

Alpha Ltd.,

SCHEDULE OF CHANGES IN WORKING CAPITAL

	2002	2003	INCREASE OR DECREASE IN CURRENT ASSETS AND CURRENT LIABILITIES	
CURRENT ASSETS	Rs.	Rs.	Dr. Rs.	Cr. Rs.
S. Debtors	140	170	30	
Stock	77	109	32	
Bills Receivable	20	30	10	
Cash in hand	15	10		
Cash at Bank	10	8		5
Total of C.A	262	327		2
CURRENT LIABILITES				
S. Creditors	25	47		22
Bills payable	20	16	4	6
Liability of Expenses	30	36		
Total of C.L	75	99		
Working capital	187	228		
Increase in working capital	41			41
	228	228	76	76

Alpha Ltd
Statement of Sources & Application of Funds
For year ended 31st March

*Funds Flow and Cash
Flow Analysis*

NOTES

SOURCES	Rs.	APPLICATION	Rs.
	(in'000)		(in'000)
Funds from Trading operations	143	Funds used for Redemption of preference shares	50
Issue of Equity Capital	100	Purchase of plant	142
Sale of Land	50	Purchase of investment	11
Sale of Machine	10	Payment of proposed dividend for 2002	42
Dividend Received	3	Payment of interim dividend	20
		Increase in working capital as per schedule of changes in working capital	41
	306		306

Workings

PLANT A/c

	Rs.		Rs.
To opening balance	80	By cash	10
To cash (purchases of plant)	142	By P & L (Loss on sale)	2
		By depreciation	10
		By closing balance	200
	222		222

NOTES

LAND A/c

	Rs.		Rs.
To opening balance	200	By cash (Sale) – balancing figure	50
To Capital Reserve – profit on sale	20	By closing balance	170
	220		220

Note:

It has been assumed that no depreciation has been written off in respect of Land A/c during the year 2003 and Land costing Rs. 30,000 (2,00,000 minus 1,70,000) was sold at Rs. 50,000.

INVESTMENT A/c

	Rs.		Rs.
To opening balance	20	By dividend Received (pre acquisition)	1
To cash (purchase) (Balancing figure)	11	By closing balance	30
	31		31

GOOD WILL A/c

	Rs.		Rs.
To opening balance	100	By P & L (Written off) (Balancing figure)	20
		By closing balance	80
	100		100

PRELIMINARY EXPENSES A/c

	Rs.		Rs.
To opening balance	15	By P & L (Written off) (Balancing figure)	5
		By closing balance	10
	15		15

PROPOSED DIVIDEND A/c

	Rs.		Rs.
To Cash (paid)	42	By opening Balance	42
To closing Balance	50	By P & L A/c	50
	92		92

*Funds Flow and Cash
Flow Analysis*

NOTES

Note : It has been assumed that proposed dividend for was paid during the year 2003.

GENERAL RESERVE A/c

	Rs.		Rs.
To closing balance	50	By opening Balance	40
		By P & L A/c (Balancing figure)	10
	50		50

PROVISION FOR TAXATION A/c

	Rs.		Rs.
To closing balance	50	By opening Balance	40
		By P & L A/c Transfer	10
		(Balancing figure)	
	50		50

ADJUSTED PROFIT & LOSS A/c

	Rs.		Rs.
To plant A/c (Depreciation)	10	By opening Balance	30
To plant A/c (Loss)	2	By Dividend (Received)	2
To proposed Dividend	50	By funds from operation	143
		(Balancing figure)	
To Goodwill A/c (Written off)	20		
To General Reserve A/c (Transfer)	10		
To Provision for Taxation	10		
To Preliminary Exp. A/c written off	5		
To interim Dividend	20		
To Closing Balance	48		
	175		175

Illustration : 9

From the balance sheets given below, prepare a Statement setting out changes in working capital and a statement showing the sources and application of funds for the year ended 31st Dec.

LIABILITIES	31 st Dec. Rs.	31 st Dec. Rs.	ASSETS	31 st Dec. Rs.	31 st Dec. Rs.
Equity share capital	3,00,000	3,50,000	Fixed Assets (net)	5,10,000	6,20,000
Preference share capital	2,00,000	1,00,000	Investments	30,000	80,000
Debentures	1,00,000	2,00,000	Current Assets	2,40,000	3,75,000
Reserves	1,10,000	2,70,000	Discounts on debentures	10,000	5,000
Provision for doubtful debts	10,000	15,000			
Current liabilities	70,000	1,45,000			
	7,90,000	10,80,000		7,90,000	10,80,000

Additional Information

1. A machine costing Rs. 70,000 (book value Rs. 40,000) was disposed off for Rs. 25,000.
2. Preference share redemption was carried out at a premium of 5%
3. Dividend at 15% was paid on equity shares for the year
4. The provision for depreciation stood at Rs. 1,50,000 on 31-12- and at Rs. 1,90,000 on 31 – 12-,
5. Stock which was valued at Rs. 90, 000 as on 31 – 12- 2002 was written up to its cost, Rs. 100, 000 for preparing profit and loss account for the year.

Solution

STATEMENT SHOWING CHANGES IN WORKING CAPITAL

	CHANGE IN C.A AND C.L			
	Rs.	Rs.	Dr.	Cr.
			Rs.	Rs.
Current Assets	2,40,000	3,75,000	1,35,000	---
	2,40,00	3,75,000		
Current Liabilities	70,000	1,45,000	---	75,000
Increasing with working capital	1,70,000 60,000	2,30,000		
	2,30,000	2,30,000	1,35,000	1,35,000

Funds Flow and Cash Flow Analysis

NOTES

Workings

PROVISION FOR DEPRECIATION A/c

	Rs.	Rs.
To fixed Assets written off (70,000 – 40,000)	30,000	By opening Balance 1,50,000
To closing Balance	1,90,000	By P & L A/c (balancing figure) 70,000
	2,20,000	2,20,000

FIXED ASSETS A/c

	Rs.	Rs.
To opening balance	6,60,000	By provision for depreciation 30,000
To purchase (balancing figure)	2,20,000	By cash 25,000
		By loss on sale 15,000
		By closing balance 8,10,000
	8,80,000	8,80,000

Statement showing funds from operations

Rs.	
Increase in reserves	1,50,000
Add Depreciation	70,000
Add Discount written off	5,000
Add increase in the provision for bad debts	5,000

Check your progress

1. State True or False

- Funds include all current assets.
- Cash flow statement in valued the movement of cash.
- A cash flow statement is like an income statement
- Funds flow statement and cash flow statement are me and the same.
- Purchase of building is an application.

NOTES

Add premium on redemption of debentures written off

5,000

Add dividend provided

45,000

Add loss on sale of machinery

15,000

Add overvaluation of opening stock

10,000

Funds from operations

3,05,000

As there is no P & L A/cs in the balance sheets, Reserves have been taken into account with the assumption that the balance in the P&L A/c would have already been transferred to the Reserves. The following entry is to be made for increasing the value of opening stock:

Stock A/c Dr. Rs. 10,000

To Reserve Rs. 10,000

Increase in the Reserve (Rs. 2,70,000 – 1,20,000 = Rs. 1,50,000)

** Since the increase in the value of opening stock is only a book adjustment, the actual funds from operation will be more by Rs. 10,000.

FUNDS FLOW STATEMENT

SOURCES		APPLICATION	
	Rs.		Rs.
Funds from Operations	3,05,000	Purchase of fixed assets	2,20,000
Issue of Debentures	50,000	Purchase of investments	50,000
Issue of share capital	1,00,000	Redemption of preference shares	1,00,000
Sale of Assets	25,000	Premium thereon	5,000
		Dividends paid	45,000
		Increase in working capital	60,000
	4,80,000		4,80,000

Illustration: 10

The summaries of the Balance sheet of Clever & Sharp Ltd., as on March and 31st March are given below:

	2002	2003
LIABILITIES	Rs.	
Rs.		
Sundry creditors	39,500	
41,135		
Bills Payable	33,780	
11,525		
Bank Overdraft	59,510	
...		
Provision for taxation	40,000	
50,000		
Reserve	50,000	
50,000		
Profit & Loss A/c	39,690	
41,220		
Share Capital	2,00,000	2,60,000
	4,62,480	4,53,880
ASSETS		
Cash at Bank	2,500	2,700
Sundry Debtors	85,175	
72,625		
Sundry Advances	2,315	735
Stock	1,11,040	97,370
Land & Building	1,48,500	1,44,250
Plant & Machinery	1,12,950	1,16,200
Good will	-	20,000
	4,62,480	4,53,880

The following additional information is obtained from the General Ledger:

- a) During the year 31st March, an interim Dividend of Rs. 26,000 paid.

NOTES

b) The assets of another company were purchased for Rs. 60,000 payable in fully paid shares of the company. The assets consisted of:

	Rs.
Stock	21,640
Machinery	18,360
Goodwill	20,000

In addition, sundry purchase of plant were totalling Rs. 5,650.

a) Income tax paid the during the year amounted to Rs. 25,000

b) The Net profit for the year before tax was Rs.652,530.

You are required to prepare a statement showing the Sources and Application of Funds for the year ended 31St March and a schedule setting out changes in working capital.

Solution:

Clever & Sharp Ltd.,

1.SCHEDULE OF CHANGES IN WORKING CAPITAL

CURRENT ASSETS	Rs.	CHANGES IN CURRENT ASSETS & CURRENT LIABILITIES		
		Rs.	Dr. Rs.	Cr. Rs.
Cash at Bank	2,500	2,700	200	--
S. Debtors	85,175	72,625	---	12,550
S. Advances	2,315	735	---	1,580
Stock	1,11,040	97,370	---	13,670
Total of C.A	2,01,030	1,73,430		
CURRENT LIABILITES				
S. Creditors	39,500	41,135		1,635
Bills payable	33,780	11,525	22,255	---
Bank Overdraft	59,510	---	59,510	---
Total of C.L.	1,32,790	52,660		
WORKING CAPITAL	68,240	1,20,770		
Increase in working capital	52,530			52,530
	1,20,770	1,20,770	81,965	81,965

Workings

NOTES

PROVISION FOR TAXATION A/c

	Rs.		Rs.
To Cash (income-tax paid)	25,000	By opening Balance	40,000
To closing Balance	50,000	By Adjusted P & L A/c (Balancing figure)	35,000
	75,000		75,000

SHARE CAPITAL A/c

	Rs.		Rs.
To closing Balance	2,60,00	By opening Balance	2,00,000
		By stock 21,640	
		By goodwill 20,000	
		By Machinery 18,360	60,000
	2,60,000		2,60,000

LAND & BUILDING A/c

	Rs.		Rs.
To Opening Balance	1,48,500	By closing Balance	1,44,250
		By Adjusted P & L A/c (Depreciation) (Balancing figure)	4,250
	1,48,500		1,48,500

PLANT & MACHINERY A/c

	Rs.		Rs.
To Opening Balance	1,12,950	By closing Balance	1,16,200
To share capital a/c	18,360	By Adjusted P & L A/c (Depreciation) (Balancing figure)	20,760
To cash (sundry purchases)	5,650		
	1,36,950		1,36,950

NOTES

ADJUSTED PROFIT & LOSS A/c

	Rs.		Rs.
To provision for taxation	35,000	By opening balance	39,690
To Depreciation – Land	4,250	By income from operations	87,540
		(Balancing figure)	
To Depreciation – Plant	20,760		
To Dividend Paid	26,000		
To Closing Balance	41,220		
	1,27,230		1,27,230

Clever & Sharp Ltd.,

2. STATEMENT OF SOURCES & APPLICATION OF FUNDS

For the year ended 31st March

SOURCES	Rs.	APPLICATION	Rs.
Funds from Trading Operations	87,540	Payment of Tax	25,000
Funds from increase in share capital (only so much as is represented by current assets sought viz., stock)	21,640	Payment of dividend	26,000
		Purchase of Machinery	5,650
		Increase in working capital as per schedule of changes in working capital	52,530
	1,09,180		1,09,180

Illustration : 11

Income statement of Bail & Co., Ltd., for the year ended 31st Dec., 2003

(‘000 omitted)

Rs.

Sales 300

Less : Cost of goods sold

190

110

Less : Other operating expenses (including Depreciation of Rs. 3)

130

Loss 20

Balance sheet of Bail & Co., Ltd

As At 31st December

(‘000 Omitted)

CURRENT ASSETS	Rs.	
Rs.		
Cash	75	50
Sundry Debtors	43	30
Closing Stock	49	14
Prepaid Rent	3	2
	170	96
Fixed Assets	90	87
Total	260	
183		
CURRENT LIABILITIES:		
Sundry Creditors	85	35
Wages Payable	3	
4		
Payable for other Expenses	11	3
	99	42
SHAREHOLDER’S FUND		
Share Capital	140	
140		
Profit & Loss A/c	21	1
Total	260	
183		

Prepare Funds flow statement & schedule of changes in working capital.

Solution

Bail & Co., Ltd.

Schedule of changes in working Capital

		CHANGES IN C.ASSETS & C. LIABILITIES		
CURRENT ASSETS	Rs.	Rs.	Dr. Rs.	Cr. Rs.
Cash	75	50	---	25
S. Debtors	43	30	---	13
Closing Stock	49	14	---	35
Prepaid Rent	3	2	---	1
Total of C.A	170	96		
CURRENT LIABILITES				
S. Creditors	85	35	50	--
Wages Payable	3	4		1
Payable for other Expenses	11	3	8	--
Total of C.L	99	42		
Working Capital	71	54		
Decrease or Release in Working Capital		17	17	--
	71	71	75	75

Working

ADJUSTED PROFIT & LOSS A/c

	Rs.		Rs.
To closing Balance	1	By opening Balance	21
To Depreciation	3		
To funds lost from Trading Operations (Balancing figure)	17		
	21		21

PROPOSED DIVIDEND A/c

SOURCES	Rs.	USES	Rs.
Decrease in Working Capital	17	Funds lost i n Trading Operations	17
	17		17

3.3 CASH FLOW ANALYSIS

Cash Flow Statement is an analytical statement prepared by the management accountant to study the impact of the business transactions of a particular period on the most liquid form of asset, namely cash. A close scrutiny of the financial statements for a period reveals the nature and sources of inflows and outflows of cash.

The behaviour of cash resource in a business is studied with interest since a large volume of business transactions affect and get affected by the cash position. Therefore, efficient cash management warrants sufficient information regarding the cash flows in summarized form. To this end, cash flow statement is prepared as a supplementary data of vital importance to top management. Unlike funds flow statement, cash flow statement deals only with changes in cash resources. Starting with the opening balance of cash and concluding with the closing balance of cash, this statement simply explains the sources and application of cash and cash only. As with any other statement prepared by management accountant, cash flow statement also must be brief and summary of the voluminous financial data. In practice, we can prepare this statement from the Balance Sheet of the respective period and from additional information supplied by the financial accountant.

In this context, we have to draw a distinction between the Cash Flow Statement and the Funds Flow Statement. Though both the statements are prepared from the same source of information, they differ mutually in the following respects:

1) Funds Flow Statement deals with sources and uses of funds in a business during a particular period. The term “funds” used in a funds flow statement implies Working Capital.

However Cash Flow Statement deals with sources and uses of cash.

2) Funds Flow Statement consists of two parts-viz., Schedule of changes in working capital and sources and uses of funds, the former dealing with current items and the latter dealing with non-current items. Contrary to this, Cash Flow Statement is a single consolidated statement dealing with changes both in current and non-current items.

3) Cash Flow Statement starts with opening balance of cash and concludes with closing balance of cash.

No such technique is adopted in the Funds Flow Statement. In a business organisation, cash would generally be flowing in from the following sources and the like.

- ☐ Issue of Shares
- ☐ Issue of Debentures
- ☐ Borrowings
- ☐ Cash sales
- ☐ Cash collections from customers
- ☐ Income from investments
- ☐ Sale of fixed assets

Similarly, cash would flow out on account of:

- ☐ Acquisition of fixed assets
- ☐ Procurement of raw-materials
- ☐ Payment of expenses
- ☐ Redemption of Loans etc.

The whole discussion can be summed up like this. The amount of cash in hand (including balance at bank) would change because of

- (a) Changes in assets and liabilities
- (b) Net cash inflow from business operation and
- (c) Payment of dividend, taxes etc.

All these factors can also be separately treated. At the time of preparing Cash Flow Statement it would be necessary to remember that:

- (i) If there is an increase in assets (including current assets), cash must have been paid out.
- (ii) If there is a reduction in assets cash must have been realised.
- (iii) If there is an increase in liabilities (including current liabilities) cash must have come in and,

(iv) If there is a reduction in liabilities cash must have been paid out or utilized.

For instance, if there is a reduction in debtors to the extent of Rs. 7,000 it surely means that Rs.7,000 cash has been realised from them. Likewise if there is a reduction in creditors to the extent of Rs. 9000 it also surely means that Rs.9,000 cash has been paid out by us. In the same way, if there is an increase in debtors to the extent of Rs.6,000, cash must have been utilized of course through a circular route. The route is purchase of goods (utilization of cash Rs. 6,000) and sale of the goods to the customers on credit, not resulting in immediate realisation of cash. A similar reasoning will show that if creditors increase by Rs.8,000 this should mean an increase in cash to the same extent. Here we have purchased goods without paying cash, but we would have sold them, against cash. The same principle can be applied for all current assets and current liabilities.

Regarding fixed assets and long-term liabilities it is obvious that an increase in fixed asset involves cash, outflow and an increase in a long term liability results in cash inflow and vice versa.

Having given separate treatment for all assets and liabilities (including current liabilities), it is simple to calculate net cash inflow from business operations by deleting the effect of non-cash items alone.

Examples of such items are:

1. Depreciation of Fixed Assets
2. Amortisation of Intangible Assets (e.g.) Goodwill, Trade Marks & Patent Rights.
3. Amortisation of Deferred Expenses (Fictitious assets) (e.g.) Preliminary Expenses, Discount on issue of Shares & Debentures.
4. Transfers, provisions and losses written off

All these items reduce the profit, since they are shown on the debit side of the Profit and Loss Account. But these items do not involve outflow of cash. Under such circumstances, cash generated by a business is more than the profit shown by the financial accountant. In order to find out cash generated from operation, these items are added back to the profit made during the year.

Reserves

If transfers are made towards General Reserve, Sinking Fund, Capital Redemption Reserve, Dividend Equalisation Fund, Compensation Fund, Development Rebate Reserve etc., out of profit made during the year, they should be added back to the profit. (These transfers do not affect the cash flow)

Provision for doubtful debts, provision for discount on debtors etc.,

Such provisions reduce the profit without reducing the cash position of the business. Hence, they should be added back to the profit for calculating the cash from operation.

Loss & gain on sale of fixed assets

Only the actual proceeds on the sale of fixed assets are treated as source of cash. 'As such loss on sale of fixed assets is added back to the profit made during the year. Gain made on the sale of a fixed assets is deducted from the profit made during the year. (In this way, the cash generated from operation can be easily calculated).

Thus, a Cash Flow Statement may contain the following source and uses of cash.

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Thus, a Cash Flow Statement may contain the following source and uses of cash.

SOURCE OF CASH	USES OF CASH
a. Issue of Capital.	a. Purchase of Fixed Assets.
b. Issue of Long -term loan securities like debentures	b. Increase in Current Assets
c. Sale of Fixed assets	c. Decrease in current liabilities like Creditors , B/P, Income received in advance etc.
d. Decrease in Current Assets like Debtors, B/R.Stock Prepaid expenses etc.	d. Payment of Dividends, Taxes etc.,
e. Increase in current liabilities.	e. Repayment of long term loans like debentures.
f. Net cash Flow from business operations	f. Redemption of preference Share capital.

NOTES

Eastern Company Ltd.
CASH FLOW STATEMENT
For the year ended 31st Dec.,

	Rs.		Rs.
Cash Balance as on 1-1-03	12,000	CASH OUTFLOWS	7,000
Add : CASH INFLOWS		1. Increase in Trade Debtors	2,4000
1. Increase in Trade Creditors & B/P	2,400	2. Purchase of Land & Buildings	2,400
3. Operating Profit	1,200	3. Purchase of Patent Rights	200
			9,600
		Cash Balance as on 31-12-03	8000
	17,600		17,600

Note : Operating profit made during the year is shown separately as a source of cash. The changes in the current assets and current liabilities are also shown as sources and uses of cash separately. The above statement is prepared on these lines. Alternatively it may be shown like this.

Calculation of Cash from operation	Rs.
Operating Profit	1,200
Add : Increase in Trade Creditors & B/P	2,400
Total cash available for use	3,600
Less : Increase in Trade Debtors	7,000
Use of cash on account of operation	3400

CASH FLOW STATEMENT
For the year ended 31st Dec

	Rs.
Cash Balance as on 1-1-	12,000
Add : SOURCES	
Issue of shares	
2,000	
Total cash available for use	14,000
Less :	
On account of operation	3,400

Purchase of Land & Buildings	2,400		<i>Funds Flow and Cash Flow Analysis</i>
Purchase of Patent Rights	200	6,000	<i>NOTES</i>
Cash Balance as on 31-12-		8,000	

Illustration : 2

Statement of financial position of Mr. Z is given below
(‘000 omitted)

	1-1-03 Rs.	31-12-03 Rs.		1-1-03 Rs.	31-12-03 Rs.
Bills payable	15	11	Cash	20	15
Capital	99	84	Debtor	10	8
			Stock	4	7
			Building	50	40
			Other A/cs	30	25
	114	95		114	95

ADDITIONAL INFORMATION :

- (i) There were no drawings
- (ii) There were no purchase or sale of either Building or other Fixed Assets.

Prepare a Statement of Cash Flow

Solution

WORKINGS (‘000 OMITTED)

(1) CALCULATION OF LOSS INCURRED DURING THE YEAR

Rs.	
Capital as on 1 – 1-	99
Capital as on 31 – 12 -	84
Loss	15

Less : DEPRECIATION

On Building	10
On other Fixed Assets	5

15

Operating profit

Nil

STATEMENT OF CASH FLOW

For the year ended 31st December

	Rs.		Rs.
Cash Balance as on 1-1-2003	20	USES OF CASH	
ADD SOURCE OF CASH		Increase in stock	3
Decrease in Debtors	2	Decrease in Bills payable	4
			7
		Cash balance as on 31 – 12 -	15
	22		22

Note : In the absence of any other information, the difference in the two capital a/c balance is taken as the loss for the year. Similarly, the differences in the respective balances of Fixed Assets and Buildings accounts are taken as depreciation.

Illustration : 3

On December 31 and December 31, Mr. 'X' had statements of final position as follows:

LIABILITY	31-12-02	31-12-03	ASSETS	31-12-02	31-12-03
	Rs.	Rs.		Rs.	Rs.
Creditors	85	40	Bank	250	400
Capital	6,265	6,120	Debtors	150	100
			Stock	50	10
			Machinery (after depreciation)	900	850
			Building (after depreciation)	5,000	4,800
	6,350	6,160		6,350	6,160

Assume that Mr. 'X' had made no withdrawals during the year and that no changes took place affecting machinery and Buildings except for depreciation prepare Cash Flow statement.

Solution:

1. LOSS INCURRED DURING THE YEAR	Rs.	Rs.
Capital as on 31-12-02	6,265	
Capital at end (31-12-03)	6,120	
Loss	145	

2. CALCULATION OF OPERATING PROFIT

Loss from operation		145
Less : Depreciation on Machinery (900 – 850)	50	
Depreciation on Building (5000 – 4800)	200	250
Operating profit		105

Mr. X's**CASH FLOW STATEMENT****For the year ended 31st December, 2003**

	Rs.		Rs.
Bank balance as on 1-1-03	250	CASH OUT FLOWS	
Add : CASH INFLOWS		Decrease in creditors	45
1. Decrease in Debtors	50		45
2. Decrease in stock	40	Bank balance as on 31 -12- 2003	400
3. Operating Profit	105		
	445		445

Illustration : 4

Following are the comparative balance sheets of Brown Company Ltd.

LIABILITY	DEC., 31 2002 Rs.	DEC., 31 2003 Rs.	ASSETS	DEC., 31 2002 Rs.	DEC., 31 2003 Rs.
Share Capital	70,000	74,000	Bank Balance	9,000	---
Debentures	12,000	6,000	Accounts Receivable	14,900	17,700
Accounts Payable	10,360	11,840	Stock –in-trade	49,200	42,700
Provision for Doubtful Debts	700	800	Buildings	20,000	40,600
Profit & Loss A/c	10,040	10,560	Good will	10,000	5,000
Bank O/D	---	2,800			
	1,03,100	1,06,000		1,03,100	1,06,000

NOTES

ADDITIONAL INFORMATION

- 1. Buildings were acquired for Rs. 20,600
- 2. Amount provided for the amortization of Goodwill totaled Rs. 5,000
- 3. Dividends were paid totaling Rs. 3,500
- 4. Debenture loan was repaid Rs. 6,000

Explain how the overdraft of Rs. 2,800 as at 31st Dec. 2003 has arisen.

Solution :

1. CALCULATION OF OPERATING PROFIT MADE DURING THE YEAR

[An increase in the Profit & Loss A/c may be taken as profit made : (10,560 – 10,040)]

	Rs.	Rs.
Profit		
520		
Add : Amortisation of goodwill		5,000
Dividend paid		3,500
Provision for doubtful debts		100
8,600		
Operating profit made during the year		
9,120		

BROWN CO., LTD
Statement of Cash Flow

For the year ending 30th June, 2003

*Funds Flow and Cash
Flow Analysis*

NOTES

	Rs.		Rs.
Bank balance as on 1-1-2003	9,000	CASH OUT FLOWS	
Add : CASH INFLOWS		1. Increase in Accounts Receivables	2,800
1. Decrease in Stock in – trade	6,500	2. Payment of Dividend	3,500
2. Increase in Accounts payable	1,480	3. Acquisition of Building	20,600
3. Issue of Shares	4,000	4. Repayment of Debentures	6,000
4. Operating Profit	9,120		
	30,100		
Bank Overdraft as on 31-12-03	2,800		
	32,900		32,900

A Critical Estimate of Cash Flow Analysis :

Day-to-day operations of a business are carried on with cash. For this reason, Cash Flow Analysis requires more detailed treatment. Instead of lumping all current assets and current liabilities together as working capital, it may be desirable to consider changes in all these items separately. A statement that has such a purpose is technically called “Cash Flow Statement”.

Cash Flow Analysis indicates the opening cash balance, the sources from which cash has been received, the uses to which it has been put and the closing cash balance. In fact, it is a specially summarized cash account of the past period concerned. In this way, the past becomes a useful guide to the future and the cash flow analysis assists in cash budgeting.

Cash Flow analysis is becoming popular with managements. In fact, it gives the proper explanation of the following circumstances: - In spite of earning sizable amount of profits...

1. The business concern is experiencing difficulty in making payment to creditors;

NOTES

2. The rate of dividend on equity shares cannot be increased due to inadequacy of cash;
3. The bank balance is getting thinner.

Under these circumstances, the management is anxious to know whether the business has really earned the reported profit and if it has, where it has gone.

For any business concern to be able to meet its obligations for payment, it is necessary that the inflow and outflow of cash should balance not only at the end of the year but also in a more regular way. The business concern may be unable to pay its bills, if the outflow of cash is greater than the inflow during any interval within the year. To overcome this kind of situation a decline of cash balance is counteracted by securing additional funds or realising the debtors, stock or fixed assets. Or new proposals involving increased outflow of cash may be deferred or rejected.

Advantages of Cash Flow Analysis

The following are some of the advantages derived from a Cash Flow Analysis:

1. It is useful in evaluating current-cash position and financial policies, from this, the management will know how much cash is needed, how much can be generated internally and how much it should arrange from outside. Thus, it is especially useful in preparing cash budgets.
2. The comparison of original forecast with actual result may highlight trends of movement that might otherwise go undetected.
3. As it gives the amount of cash inflows of operation the management may consider the possibility of retiring long-term loans, replacement of plant facilities etc.
4. It enables to answer the queries relating to a situation when the business has made a profit and yet runs out of money or when it has suffered a loss and still has plenty of money at bank.

Though the cash flow statement cannot replace the usual financial statements, it serves as a very useful supplementary statement. It provides a barometer for measuring any change in the speed with which cash is flowing through the different parts of the business and its impact on the profitability of the business.

Illustration: 5

You are required to prepare a Cash Flow Statement from the following balance sheets of a business concern:

NOTES

LIABILITY	1-1-2003	31-12-2003	ASSETS	1-1-2003	31-12-2003
	Rs.	Rs.		Rs.	Rs.
Rajan's Capital	62,500	76,500	Buildings	37,500	55,000
Loan	20,000	25,000	Equipment	40,000	27,500
Creditors	20,000	22,000	Stock	17,500	12,500
Mrs. Rajan's Loan	12,500	----	Debtors	15,000	25,000
			Cash	5,000	3,500
	1,15,000	1,23,500		1,15,000	1,23,500

ADDITIONAL INFORMATION:

- 1. Net profit for the year 2003 amounted to Rs. 22,500.
- 2. During the year an equipment costing Rs. 5,000 (accumulated depreciation Rs. 1,500) was sold for Rs.2,500.
- 3. The provision for depreciation against equipment as on 1-1-2003 was Rs. 12,500 and on 31-12-2003 Rs. 20,000.

Solution

Workings

		Rs.
Net profit for 2003 as given		22,500
Add : Provision for Depreciation	9,000	
Loss on sale of equipment	1,000	10,000
Operating profit		32,500

CAPITAL ACCOUNT

	Rs.	Rs.
To Closing Balance	76,500	By opening Balance 62,500
To Drawings (Cash A/c Balance) (Balancing figure)	8,500	By Net Profit 22,500
	85,000	85,000

NOTES

PROVISION FOR DEPRECIATION A/C

	Rs.		Rs.
To Closing Balance	20,000	By opening Balance	12,500
To Equipment A/C	1,500	By P & L A/c (Depn. for 2003 – Balancing figure)	9,000
	21,500		21,500

EQUIPMENT A/C

	Rs.		Rs.
To Opening Balance (at cost) Rs. 40,000 plus Rs. 12500	52,500	By Cash A/c (sale)	2,500
		By provision for Dep., A/c	1,500
		By P & L A/c (Loss on sale)	1,000
		By closing balance (at cost) Rs. 27,500 + 20,000	47,500
	52,500		52,500

RAJAN'S

Cash Flow Statement

For the year ended 31st Dec., 2003.

	Rs.		Rs.
Cash Balance as on 1.1.03	5,000	CASH OUTFLOWS	
Add : CASH INFLOWS		Increase in Debtors	10,000
Decrease in Stock	5,000	Purchase of Building	17,500
Increase in creditors	2,000	Mrs. Rajan's loan repaid	12,500
Sale of Equipment	2,500	Drawings	8,500
Loan from State Bank	5,000		48,500
Operating Profit	32,500	Cash Balance as on 31-12-03	3,500
	52,000		52,000

Illustration : 6

Vee Gee Pee Ltd., has prepared the following Trial Balance as on

31st December 2002 and 2003:

TRIAL BALANCE
[Rs. 0,00,000 omitted]

*Funds Flow and Cash
Flow Analysis*

NOTES

DEBIT BALANCE	2002 Rs.	2003 Rs.	CERDIT BALANCE	2002 Rs.	2003 Rs.
Cash	20	7	Accounts payable	14	39
Accounts Receivable	5	20	Accrued property tax	1	3
Inventory	15	40	Mortgage payable in 2000	--	40
Prepaid expenses	2	4		7	10
Fixed Assets (Net)	50	91		70	70
	92	162		92	162

**INCOME STATEMENT FOR THE YEAR ENDED 31st DECEMBER
2003**

	Rs.	Rs.
Sales		100
Less : COST OF SALES		
Inventory, December 31, 2002		15
Add : Purchases	98	
	113	
Cost of goods available for sale		
Less : Inventory, December 31, 2003	40	73
Less : OTHER EXPENSES		27
General Expenses	11	
Depreciation		8
Property tax provision	4	23
Net Income	4	
Less : Dividends		1
Income retained for the year		3
Add : Retained earnings, December 31,2002		7
Retained earnings, December 31,2003		10

NOTES

On December 28, 2003 Vee Gee Pee Ltd., paid Rs. 90 Lakhs in cash and signed Rs. 4 crores mortgage on a new building acquired to accommodate and expansion of operations. Despite the fact that the net income Rs. 40 lakhs was the highest in the company's history Directors of Vee Gee Pee Ltd., were perplexed by the company's extremely low cash balance.

You are required to prepare a statement of cash flow and also a fund flow statement.

Prepare for the chairman a brief note as to why cash has decreased even though its working capital has increased and net income was Rs. 40 Lakhs.

Solution :

Workings			
(Rs. 0,00,000 omitted)			
		Rs.	
Rs.			
Net income for the period retained			3
Add Dividends		1	
Depreciation		8	
Property tax provision		4	13
Net operating income			16

Vee Gee Pee Ltd.,
CASH FLOW STATEMENT
For the year ended 31st December, 2003
(Rs. 0,00,000 omitted)

	Rs.		Rs.
Cash Balance as on 31-12-2002	20	CASH OUTFLOWS	
Add : CASH INFLOWS		1. Increase in Account Receivables	15
1. Increase in Accounts Payable	25	2. Increase in inventory	25
2. Operating Profit	16	3. Increase in prepaid Expenses	2
		4. Payment of Dividend	1
		5. Payment of Propertytax	2
		6. Purchase of fixed assets	9
			54
		Cash Balance as on 31-12-2003	7
	61		61

Vee Gee Pee Ltd.,

FUNDS FLOW STATEMENT

Statement of Sources & Application of Funds for the year ended 31st
December 2003

(Rs. 0,00,000 omitted)

SOURCES	Rs.	APPLICATIONS	Rs.
FUNDS FROM OPERATION	16	Payment of Dividend	1
(Net income before dividend)			
		Purchase of Fixed asset	9
		Payment Tax	4
			14
		Net increase in working capital	2
	16		16

To

The Chairman

Vee Gee Pee Ltd.,

Panaji (Goa).

Dear Sir,

On the basis of the financial information supplied to me I give below
my opinion regarding the financial weakness of your business.

NOTES

1. On review of the Funds Flow Statement, it is quite apparent that the purchase of fixed asset used up funds to the extent of Rs. 90 Lakhs.
2. The reasons for poor position of cash balance on 31st December 2003 can be established in the heavy demand for cash to expand fixed assets, inventories and receivables. These items have reduced the cash balance to rock bottom level despite heavy profits.

Thanking You,

Yours faithfully,

R. Swamy

Management Accountant.

Dated: the 16th February, 2003.

Panaji.

Illustration: 7

The abridged Income Statements for the years ended June 30,2002 and 2003 and the Balance Sheets on those dates of Pearls Ltd. were.

	(1) INCOME STATEMENTS	('000' omitted)
	2002	2003
	Rs.	Rs.
Trading Profit	450	700
Profit on sale of investments	—	20
	450	720
Less: Tax on profits for the year	277	450
Brought forward from previous year	173	270
Income-tax over-provided in Previous year	150	213
Proposed Dividend	323	
Transfer to General Reserve	150	483
	—	
Balance of undistributed profit.	100	250
	173	233

BALANCE SHEETS

*Funds Flow and Cash
Flow Analysis*

NOTES

A. FIXED ASSETS	Rs. .	Rs.	Rs.	Rs.
Cost	500		600	
Additions	100	600	80	680
Less: Depreciation		200		320
		400		360
B. CURRENT ASSETS				
Investments	120		---	
Stock at cost	1,780		2,000	
Debtors	1,300		2,185	
	3,200		4,185	
C. CURRENT LIABILITIES				
Bank overdraft	1,150		1,400	
Trade creditors	700		900	
Expenses creditors	80		92	
Current taxation	197		300	
Proposed dividend	150		150	
	2,277		2,842	
D. NET CURRENT ASSETS : (B-C)				
Equity Share Capital	923			1,343
Total (A+D)	1,323			1,703
General Reserve	700			800
P & L A/c	250			350
Future Taxation	173			233
Depreciation	200			320
	1,323			1,703

Workings : ('000) omitted

DEBTORS A/c

	Rs.		Rs.
To opening balance	1,300	By closing balance	2,185
To sales	8,000	By cash received (Balancing figure)	7,115
	9,300		9,300

TRADE CREDITORS A/c

	Rs.		Rs.
Closing balance	900	By opening Balance	700
Cash paid (Balancing figure)	6,300	By purchase	6,500
	7,200		7,200

Trading profit for 2003

Expenses paid in cash

	Rs.	Rs.
Sales		8000
Opening stock	1,780	
Add : Purchase	6,500	
	8,280	
Less Closing stock	2,000	
Less cost of goods sold		6,280
Cross profit		1,720
Less Depreciation	120	
Expenses (Balancing Figure)	900	1,020
Trading Profit as shown in the income Statement		700

TAXATION PROVISION A/C

	Rs.
Expenses incurred (as per Trading Profit for 2000 Statement)	900
Add Expenses outstanding (2002)	80
	980
Less Expenses outstanding (2003)	92
Expenses paid	888

*Funds Flow and Cash
Flow Analysis*

NOTES

PEARL Ltd.,

(1) SUMMARISED CASH FLOW STATEMENT

For the year Ended 30th June 2003 ('000 omitted)

CASH INFLOWS	Rs.	CASH OUTFLOWS	Rs.
Cash received from Debtors	7,115	Bank overdraft as on 30.6.2002	1,150
Sale of investment	140	Paid to Trade Creditors	6,300
Issue of shares	100	Paid for Expenses	888
Bank overdraft as on 30.6.2003	1,400	Payment of Dividend	150
		Payment of Tax	187
		Purchases of Fixed Assets	80
	8,755		8,755

PEARL Ltd.,

(2) STATEMENT OF SOURCES & APPLICATION OF FUNDS

For the year Ended 30th June 2003 ('000 omitted)

SOURCES	Rs.	APPLICATION	Rs.
Operating profit (700+ depreciation 120)	820	Payment of Dividend	80
Issue of shares	100	Payment of Tax	187
Sale of investment	140	Purchase of Fixed Assets	643
	1,060		1,060

Illustration: 8

The summarized Balance sheets of a company for two successive years are as follows:

(Rs.000 omitted)

		YEAR I RS.	YEAR 2 RS.
SOURCES OF FUNDS:			
Equity share capital		1,760	1,760
Share premium		207	
		207	
Capital Reserve		440	440
Revenue Reserve		2,192	2,434
	A	4,599	4,841
Taxation Equailisation a/c		618	622
	B	5,217	5,463
EMPLOYMENT OF FUNDS:			
FIXED ASSETS			
Land & Buildings		1,318	1,354
Plant & Equipments		1,243	1,161
Goodwill & patents		314	341
	C	2,875	2,856
CURRENT ASSETS:			
Stock		2,294	2,287
Debtors		1,879	1,974
Cash & Bank		46	186
	D	4,219	4,447
LESS CURRENT LIABILITIES:			
Creditors		1,069	1,118
Current Taxation		394	358
Debentures		282	109
Proposed Dividend		202	255
	E	1,947	1,840
Working Capital	F [D-E]	2,272	2,607
Total	G[F+C]	5,147	5,463

Notes on the accounts show that:

1. Depreciation has been charged for year 2 as follows:

Land & Buildings Rs. 35,000

Plant & Equipments Rs. 2,40,000

Good will & patents Rs. 9,000

2. Plant sold during year 2 realised RS.16,000. It was included at cost in Balance sheet for year 1 at Rs. 61,000 with accumulated depreciation of Rs. 53,000. The difference between realisation and written down value was credited to Profit and Loss A/c.

3. The balance of Profit for year 2 after taxation charge and dividend appropriation has been transferred to Revenue.

Further enquires reveal that during year 2 the company made cash payments for total dividends including tax thereon amounting to Rs. 3,71,000 and other taxation amounting to Rs. 4,25,000.

You are required to prepare statement which explains the improvement in the Net cash Balance during year 2.

Solution:

Workings: ('000 omitted)

LAND & BUILDING A/c

	Rs.		Rs.
To opening Balance	1,388	By closing balance	1,354
To (purchase) cash – A/c (balancing figure)	1	By Depreciation	35
	1389		1389

PLANT & EQUIPMENTS A/c

	Rs.		Rs.
To opening Balance	1,243	By closing balance	1,161
To P&L A/c (profit transferred)	8	By cash (sale)	16
To (purchases) cash A/c – Balancing figure	166	By Depreciation	240
	1,417		1,417

NOTES

GOOD WILL & PATENTS A/c

	Rs.	Rs.
To opening balance	314 By P & L A/c	9
To cash (purchase)	36 By closing balance	341
	350	350

DIVIDENDS A/c

	Rs.	Rs.
To closing balance	255 By opening balance	202
	By P&L A/c proposed	53
	255	255

	Rs.
Cost of plant sold	61,000
Less: Accumulated Depreciation	53,000
	8,000
Add : Profit on sale of plant transferred to P & L A/c	8,000
Sale price of plant	16,000

DETERMINATION OF OPERATING PROFIT

	Rs	
Apparent increase in Revenue Reserve A/c		2,42,000
Add: Increase in Taxation Equalisation A/c		4,000
Add: Depreciation on Land	35,000	
Plant	2,40,000	
Good will	9,000	2,84,000
		5,30,000
Less profit on sale on plant:		8,000
Operating profit		5,22,000

CASH FLOW STATEMENT

*Funds Flow and Cash
Flow Analysis*

NOTES

For the year ended

	Rs.	Rs.
Cash & Bank Balance as on First year end	46,000	CASH OUT FLOWS
Add : CASH FLOWS		Increase in Debtors 95,000
Decrease in stock	7,000	Purchase of Land 1,000
Increase in creditors	49,000	Purchase of Plant 1,66,000
Sale of plant	16,000	Purchase of Goodwill 36,000
Proposed Dividend	53,000	Payment of Tax 36,000
Operating profit	5,22,000	Repayment of Debentures 1,73,000
		5,07,000
		Cash & Bank Balance as on second year end 1,86,000
	6,93,000	6,93,000

Illustration : 8

From the following Balance sheets and information of A Ltd., for 2002 and 2003 draw out a) Statement of Changes in working Capital; b) fund flow statement; and c) Cash flow statement.

Balance Sheets of A Ltd., As at

CAPITAL & LIABILITIES	2002 Rs.	2003 Rs.	ASSETS	2002 Rs.	2003 Rs.
Equity shares	2,00,000	3,00,000	Goodwill	50,000	40,000
8% Redeemable preference shares	1,00,000	50,000	Land & Buildings	1,00,000	75,000
General Reserve	20,000	30,000	Plant	90,000	
Capital Reserve	---	25,000	Trade investments	10,000	
P&L A/c	18,000	27,000	Sundry debtors	60,000	
Proposed Dividend	28,000	39,000	Stock	85,000	
Current Liabilities			Bills Receivable	15,000	
Sundry creditors	25,000	47,000	Cash in hand	7,000	
Bills payable	10,000	6,000	Cash in Bank	10,000	
Liabilities for expenses	8,000	6,000	Preliminary Expenses	10,000	
Provision for taxation	28,000	32,000			
	4,37,000	5,62,000		4,37,000	5,62,000

1. In 2003 Rs. 18,00 depreciation has been written off on plant Account and no depreciation has been charged on Land & Buildings a/c.
2. A piece of land has been sold out and the balance has been re-valued; profits on re-valuation and sale being transferred to capital Reserve. There is no other entry capital Reserve Account.
3. A plant was sold for Rs. 12,000 (w.d.v. Rs. 15,000)
4. Rs. 2,100 dividend has been received, but it includes.
5. An interim dividend of Rs. 10,000 has been paid in 2003.

Solution

STATEMENT OF CHANGES IN WORKING CAPITAL

*Funds Flow and Cash
Flow Analysis*

NOTES

Particulars	2002	2003	Dr.	Cr.
	Rs.	Rs.	Rs.	Rs.
CURRENT ASSETS				
Sundry Debtors	60,000	90,000	30,000	
Stock	85,000	78,000		7,000
Bill Receivable	15,000	18,000	3,000	
Cash in hand				1,000
Cash at bank			12,000	
Total of C.A	10,000	22,000		
	1,77,000	2,14,000		
CURRENT LIABILITIES				
Sundry creditors	25,000	47,000		22,000
Provision for taxation	28,000	32,000		
Liabilities for expenses	8,000	6,000	2,000	
Bills payable	10,000	6,000	4,000	
Total of C.L	71,000	91,000		
Working Capital	1,06,000	1,23,000		
Net increase in working capital	17,000			17,000
	1,23,000	1,23,000	51,000	51,000

Workings

LAND AND BUILDING A/c

	Rs.		Rs.
To opening balance	1,00,000	By opening Balance	75,000
To P&L A/c (Profit transferred)	25,000	By cash (Sale) – Balancing figure	50,000
	1,25,000		1,25,000

NOTES

INVESTMENT A/c

	Rs.	Rs.
To opening balance	90,000	By opening Balance 1,91,000
To cash	101,000	By depreciation 18,000
		By Cash 12,000
		By P&L A/c (Loss on Sale) 3,000
Balancing figure	1,91,000	1,91,000

PLANT A/c

	Rs.	Rs.
To opening balance	1,00,000	By opening Balance 75,000
To cash (purchase)	8,000	By Pre - Acquisition dive - received 18,000
		Depreciation 12,000
		Cash Loss P&L 3,000
	1,08,000	1,08,000

ADJUSTED PROFIT & LOSS A/c

	Rs.		Rs.
To Non - trading	---	By opening balance	18,000
To Loss on sale of plant	3,000	By dividend (2100 - 600)	1,500
To Depreciation	18,000	By trading profit Less : Taxation (Balancing figure)	1,00,500
To General Reserve	10,000		
To proposed dividend	39,000		
To interim Dividend	10,000		
To goodwill	10,000		
To preliminary expenses	3,000		
To closing balance	27,000		
	1,20,000		1,20,000

A Ltd.,
FUNDS FLOW STATEMENT
For the year ended ... 2003

*Funds Flow and Cash
Flow Analysis*

NOTES

	Rs.		Rs.
Funds from operation (including Depreciaton)	1,00,500	Payment of Dividend for 203	28,000
Sale of Land	50,000	Payment of Interim dividend	10,000
Sale of plant	12,000	Repayment of Redeemable pref. shares	50,000
Dividend Received	2,100	Purchase of investments	1,34,000
Issue of Equity Shares	1,00,000	Purchase of plant	25,000
			2,47,000
		Increase in working capital	17,000
	2,64,600		2,64,600

A Ltd.
CASH FLOW STATEMENT
For the year ended.... 2003

NOTES

Check your progress

2. Fill in the blanks

a. Increase in the amount
of bills payable results in

— in cash.

b. Decrease in debtors
results in _____

cash

c. Funds means _____

_____ working

capital.

d. Increase in working
capital is _____

of funds.

e. Fund from operation is _____

_____ of

funds.

	Rs.	CASH OUT FLOWS:	
Cash & Bank Balances	17,000	Increase in Debtors	30,000
(Rs.7,000+Rs.10,000) as on-2002		Increase in B/R	3,000
ADD CASH INFLOWS:		Decrease in L. Expenses	4,000
Decrease in stock	7,000	Payment of 2002 dividend	28,000
Increase in S. Creditors	2,000		
increase in P. Taxation	4,000	Payment of interim dividend	10,000
Sate of Land	50,000	Repayment Redeemable	50,000
Sale of Plant	12,000	preference	
Dividend Received	2,1000	Purchase of Plant	1,34,000
Equity Share issue	1,00,000		
Operating Profit	1,00,500	Purchase of Investment	25,600
			2,86,600
		Closing cash & Bank	
		Balances (Rs. 6,000	28,000
		+Rs.22,000) as on..2003	
	3,14,600		3,14,600

3.4 KEY TERMS

• Funds: -

An economic value which is readily convertible into goods and services gt is a financial aspect of all significant transactions between the business and outsides, whether they affect cash or working capital gi is a net working capital.

i.e. current abets (-) current liabilities

• Funds from operations: -

Working capital affected by the operations of business. To be calculated by making necessary changes in profit or loss.

• Funds Flow Statement: -

It contains sources and uses of funds in a business during a particular Repaid.

• Cash Flow Statement: -

It deals with sources and uses of cash.

3.5 SUMMARY

In this chapter the increase or decrease of working capital, both in the operation of business and in the changes is the fixed assets can be understood with the association of relevant changes of current and non current transsactions. In continuation of this accurate cash transaction are also understood with an effect of changes in non current transactions.

Any given balance sheets for two different periods can be analyzed effectively for the preparations of funds flow statement as well as cash flow statement.

3.6 ANSWERS TO CHECK YOUR PROGRESS

- | | | | |
|----|-------------|-------------------|-----------|
| 1. | a) True | b) True | c) False |
| | d) False | e) True | |
| 2. | a) Increase | b) Increase | c) Net |
| | d) Net | d) An application | e) Source |

3.7 QUESTIONS AND ANSWERS

1. How management is benefited from the underlying philosophy of Funds Flow Analysis?
2. “A Funds Flow Statement is a better substitute for an income Statement” Discuss.
3. Is Depreciation a Source of fund?
4. From the following prepare a schedule showing changes in the working capital during 2003.

**BALANCE SHEET OF WISE LTD.,
As on December 31**

NOTES

	2002 Rs.	2002 ' Rs.		2002 Rs.	2002 Rs.
Share capital	500	600	Fixed Assets	1000	1,120
Reserves	150	180	Less Depreciation written off	370	460
Debentures	300	250		630	660
Creditors for goods	230	240	Stock – in – trade	240	370
Crs. For expenses	40	65	Book Debts	250	230
			Cash & Bank	80	60
			Preliminary Expenses	20	15
	1,220	1,335		1,220	1,335

5. Following is the Comparative Balance Sheet of Western System Ltd.:

Rs. (in lakhs)

ASSETS	II YEAR	I YEAR	LIABILITIES	II YEAR	I YEAR
Cash	4,000	6,000	Share Capital	19,000	18,000
Trade Debtors	19,000	15,500	Trade Creditors & Bills payable	7,600	6,400
Patent Rights	900	800	Profit & Loss Appropriation Account	3,500	2,900
Stock	6,200	5,000			
Rs. (in lakhs)					
	30,100	27,300		30,100	27,300

a) a Schedule of changes in Working Capital

b) a Statement of Sources & Application of Funds

6. From the following Balance sheets of X Ltd., as at December 31 2002 and 2003 you are required to prepare statement of sources and uses of cash.

LIABILITIES	2002 Rs.	2003 Rs.	ASSETS Rs.	2002 Rs.	2003 Rs.
Equity Shares	3,00,000	4,00,000	Good will	1,15,000	90,000
8% Redeemable	1,50,000	1,00,000	Land & Buildings	2,00,000	1,70,000
Preference shares			Plant	80,000	2,00,000
General Reserve	40,000	70,000	Debtors	1,60,000	2,36,000
P & L A/c	30,000				
		83,000			
Proposed	42,000		Stock		1,09,000
Dividend		50,000		77,000	
Creditors	55,000		Bills Receivable		
		83,000		20,000	30,000
Bills Payable	20,000	16,000	Cash in hand and		...
Provision for taxation			at Bank	25,000	
Bank overdraft	--	18,000			
	6,77,000	8,35,000		6,77,000	8,35,000

*Funds Flow and Cash
Flow Analysis*

NOTES

Following are the Balance Sheets of a Ltd.

1. Depreciation of Rs.10,000 on Plant A/c has been charged.
2. Depreciation of Rs. 20,000 on Land & Buildings A, has ben charged.
3. An interim dividend of Rs. 20,000 has been paid in 2003.
4. Income – tax Rs. 35, Overdraft or Rs.18,000 has arisen.

1.What is the Primary purpose of Cash Flow Statement

UNIT 4 MARGINAL COSTING

Structure

- 4.0 Introduction
- 4.1 Unit objectives
- 4.2 Marginal costing – meaning and calculation
- 4.3 Application of marginal costing method
- 4.4 Advantages of marginal costing
- 4.5 Cost – volume- profit analysis
- 4.6 Profit factors and Break – even calculations
- 4.7 Key terms
- 4.8 Summary
- 4.9 Answers to check your progress
- 4.10 Questions / Exercises

4.0 INTRODUCTION

Marginal costing is not a distinct method of costing like job costing, process costing operation costing, etc., but a special technique used for managerial decision making. Marginal costing is used to provide a basis for the interpretation of cost data to measure the profitability of different products, processes and cost centres in the course of decision making. It can, therefore, be used in conjunction with the different methods of costing such as job costing, process costing, etc., or even with other techniques such as standard costing or budgetary control.

In marginal costing, cost ascertainment is made on the basis of the nature of cost. It gives consideration to behavior of costs. In other words, the technique has developed from a particular conception and expression of the nature and behaviour of costs and their effect upon the profitability of an undertaking.

In the orthodox or total cost method, as opposed to marginal costing method, the classification of costs is based on functional basis. Under this method the total cost is the sum total of the costs of direct material, direct labour, direct expenses, manufacturing overheads, administration overheads, selling and distribution overheads. In this system, other things being equal, the total cost per unit will remain constant only when the level of output or

mixture is the same from period to period. Since these factors are continually fluctuating, the actual total cost will vary from one period to another. Thus, it is possible for the costing department to say one day that an item costs Rs. 20 and the next day it costs Rs. 18. This situation arises because of changes in volume of output and the fixed cost.

4.1 UNIT OBJECTIVES

- Understand the difference between absorption costing and marginal costing
- Understand the concept of contribution and contribution to sales ratio.
- Understand the method of computation of break – even point, both mathematically and also with the help of a graph.
- Understand the basic limitations of break even analysis.

4.2 MARGINAL COSTING - MEANING AND CALCULATIONS

Marginal Costing, as one of the tools of management accounting, helps management in making certain decisions. It provides management with information regarding the behaviour of cost and the incidence of such costs on the profitability of an undertaking.

Marginal Costing is not a separate system of costing; it is only a technique used by accountants to aid management decisions. As Brown & Howard rightly observe, marginal costing is probably the most controversial subject in the whole sphere of management accounting. Controversy has arisen not only over the usefulness of marginal costing but even about what the phrase means. Terminology differs from country to country. For instance, the name Marginal Costing is widely used in the U.K. and Europe. On the other hand, the phrase Direct Costing is preferred in the U.S.A. This technique of costing is also known as 'Variable Costing', 'Differential Costing', or Out of pocket Costing.

What marginal cost means?

We can give two possible interpretations for the phrase marginal cost. They are

1. At a given volume output, marginal cost is the addition to the total cost arising out of the production of one more unit. Here 'one unit' means a single unit or a single batch or single batch or some

convenient multiple. It is in this sense the words "Incremental costs" or "Differential costs" are used by the Economists. According to them marginal cost means the amount by which the total cost varies as direct result of the change in the volume of production by one unit.

2. When it is used in the plural (as marginal costs), we mean the total of all variable costs (i.e., all costs that vary directly with the volume of output). For all accounting purpose we use only this figure. Whenever the output is changed, the total costs vary accordingly; this variation arising directly from the change in the output will be taken as the marginal costs.

In a nutshell, by marginal cost we mean the total of all variable costs of a particular product.

According to the official definition "Marginal Cost" is the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one in practice this is measured by the total variable cost attributable to one unit.

Marginal costing is defined as 'the ascertainment of marginal costs and of the effect on profit of changes in volume or type of output by differentiating between fixed costs and variable costs'.

Thus all the costs attributed to a product are broadly classified into two viz., fixed costs and variable costs. Fixed costs are those elements of the costs of production which are not affected by variations in the volume of output i.e. under normal conditions, fixed costs remain constant irrespective of the volume of output. On the other hand variable costs are those elements of costs which tend to vary directly with the volume of output. The total of all such variable elements of the costs of a product is called marginal cost of that product. The difference between the selling price and the marginal cost of a product is called "contribution" which is the most significant aspect of marginal costing. All the decisions made with the help of marginal costing are based on this concept. It is also called "gross margin". All the products are expected to 'contribute' towards a fund from which the total of all fixed costs is deducted the surplus being the profit. Thus, the contributions of all products (or) all units of the product, represent (a) Sales less variable cost or

b) Fixed costs plus profit (or fixed cost less loss). Since, much emphasis is placed on this contribution, we can frame an equation as follows:

Marginal cost equation

$$\text{Sales} - \text{Variable Costs} = \text{Fixed Costs} + \text{Profit}$$

$$S - V = F + P$$

The following specimen of cost statement will show the components of marginal cost and total cost (i.e., the different types of variable cost and the fixed costs).

COST STATEMENT	Rs.
Direct Materials	xxx
Direct Labour (wages)	xxx
Direct Expenses	xxx
Prime cost	xxx
Variable : overheads	xxx
Marginal cost of production	xxx
Fixed overhead	xxx

Features of Marginal Costing

Marginal Costing , although considered only as a special technique of costing (and not a separate system), has got certain special features for its own, which can give us many advantages when they are used along with other costing methods.

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Given below is a brief account of the special features of marginal costing method.

1. The most important feature of this method is the Separation of fixed costs and variable costs. In the orthodox system of costing, all costs, (both fixed and variable) are absorbed in the product costs (known as "Absorption Costing" or "Total costs Costing": On the other hand, under the technique of marginal costing only the variable costs (marginal costs) are charged to the

products. Thus the marginal costs alone are considered to be the costs of product under marginal costing system.

2. In the usual method of costing, (absorption costing), stock are valued on the basis of total costs incurred on their production. But in the marginal-costing system, valuation of stock-in-trade (both finished and semi finished) is made only on the basis of their marginal costs.

3. Like the cost determination, calculation of profit, is also done in a special manner in marginal costing method. First the marginal cost of production will be deducted from the sales; the remaining proceeds are known as "Contribution". The Contributions of all the products are brought into a pool from which the total of fixed costs will be deducted. If there is any surplus after meeting the fixed costs, it forms the profit.

Here also is a marked difference between the orthodox system and marginal system in the calculation of profits, that is, in both the systems profit is calculated after deducting both fixed and variable costs from the sales; while in the absorption costing both the costs (fixed & variable) are deducted directly from the sales, in the marginal costing first contribution is found out by charging only variable costs to the sale proceeds. Then, fixed costs are absorbed in the total of contributions of all the products. Thus, fixed Costs are not apportioned to the individual products under marginal costing. This is the basic and salient principle of marginal costing. The significance of the treatment of costs in this manner will be highlighted in the succeeding pages of this lesson.

4. The profitability of each department or product will be determined by its contribution. From the sum total of these contributions, total fixed costs will be deducted to arrive at the profit. All these features are illustrated below with imaginary figures.

PARTICULARS	COST PER	COST PER
	100 UNITS	120 UNITS
VARIABLE EXPENSES	Rs.	Rs.
Direct Materials	1,500	1,800
Direct Labour	1,000	1,200
Variable overheads	600	720
FIXED EXPENSES	1,500	1,500
Total Cost	4,600	5,220
Cost per unit	46	43.50

Cost Statements Illustrated

1. Absorption Costing

	PRODUCT X	PRODUCT Y	TOTAL
Sales	7,500	12,000	19,500
Direct Materials	2,200	3,200	5,400
Direct Wages	1,500	4,500	6,000
Variable overheads	1,000	3,000	4,000
Fixed overheads	500	1,500	2,000
Total costs	5,200	12,200	17,400
Total	2,300	(-200)	2,100
		Loss	

Note : Total cost of production increases as volume of production is increased. On the other hand, total cost per unit decreases as production is increased. The reason for this is explained in the succeeding illustrations in this lesson.

2. Marginal Costing Method

	PRODUCT X	PRODUCT Y	TOTAL
Sales	7,500	12,000	19,500
Direct Materials	2,200	3,200	5,400
Direct Wages	1,500	4,500	6,000
Variable overheads	1,000	3,000	4,000
Marginal Costs	4,700	10,700	15,400
Contribution	2,800	1,300	4,100
	Rs.		
Total contribution	=	4,100	
Less Total fixed Expenses	=	2,000	
Profit		2,100	

Note 1 : Here profit is calculated for every product after apportioning fixed cost to both the products.

Note 2 : Under both the methods the profit figure is the same but the method of calculation differs from one another.

Importance of Contribution (Segregation of Fixed Costs)

From the above calculation it may be seen that the total costing method is preferable because it shows the profit or loss of each product separately. However, the second method will be more useful under different contexts. The significance of the concept of contribution is well explained in this method (marginal costing method). When fixed costs are apportioned to the cost centres individually, certain products may show a loss. This may induce the management to stop producing that particular product which shows an individual loss. For example, in the preceding illustration, Product ‘Y’ shows a loss of Rs. 200. A casual study of the profit statement will suggest to stop the production of the product. However such a decision will only augment the loss because the contribution of that product Rs. 1 ,300 was originally used to absorb the fixed costs proportionately. If that contribution is avoided, the fixed costs, which remain constant, will have to be charged to the other product. This fact is explained in the following statement based on the above illustration.

PARTICULARS	PRODUCT X
	Rs.
Sales	7,500
VARIABLE EXPENSES	
Direct Materials	2,200
Direct Wages	1,500
Overhead	1,000
Fixed Expenses	2,000
Total Costs	6,700
Profit	800

When the Production of Product Y is stopped.

(i.e.), Product ‘X’ alone is produced

From the above table of calculations, it is clear that, when the production of Product 'Y' is stopped, its contribution of Rs. 1, 300 is lost. To that extent, fixed costs are to be met out of the contribution of Product 'X'. Therefore the net profit is also similarly reduced by Rs. 1,300. (i.e. , original profit was Rs. 2, 100 but now the profit comes down to Rs. 800 only). This analysis of the behaviour and treatment of costs and the separation of fixed costs will therefore, clearly advocate the continuation of the production of Product 'Y'. This information can be obtained only when marginal costing method is used

Simple Marginal Cost A/c (with imaginary figures)

Valuation of closing stock and profit calculations:

Illustration: 1

A company manufactures a certain commodity. During the three years 2001, 2002 & 2003, volume of productions was kept constant at 15,000 units. The costs incurred every year were as follows:

VARIABLE EXPENSES:	Rs.
Raw Materials	9,00,000
Wages .	5,00,000
Variable factory overheads	2,50,000
Marginal costs	16,50,000.
Fixed Expenses	3,00,000
Total cost	19,50,000

Total Costs per unit ...	<u>19,50,000</u>	= Rs.130
	15,000	

Marginal cost per unit ...	<u>16,50,000</u>	= Rs. 110
	15,000	

The sales figures for the same period were: 2001-12,000 units; 2002 - 16,000 units; 2003-17,000. Throughout this period the price was maintained at Rs. 150 per unit.

Calculate the profits or losses for these three years under both the methods of costing.

Workings:

Calculation of closing stock at the end of every year

	2001	2002
2003		
	(Units)	(Units)
(Units)		
Opening stock	Nil	3,000
2,000		
Volume of production	15,000	15,000
15,000		
	15,000	18,000
17,000		
Less : Volume of Sales	12,000	16,000
17,000		
Closing stock	3,000	2,000
Nil		

VALUE OF CLOSING STOCK:

1. Total Cost Basis:	3,90,000	2,60,000
Nil		
(Units x IRS. 130)		

2. Marginal cost basis:

(Units x IRS. 110)	3,30,000	2,20,000
Nil		

STATEMENT OF PROFIT AND LOSS FOR 3 YEARS

1. ABSORPTION COSTING [Rs. IN THOUSANDS]

	Rs. 2001 Rs.	Rs.	2002 Rs. Rs.	2003 Rs.
Sales	1,800		2,400	2,550
Opening stock	Nil	390	260	
Add: Total cost of goods Produced	1,950	1,950	1,950	
	1,950	2340	2,210	
	390	260	Nil	
Less: Closing stock (cost of goods sold)	1560		2,080	2,210
Profit earned	240		320	340

Note 1. Closing stocks are shown on total cost basis -viz IRS. 130 per unit.

2. Total Profit = 240+320+340 = Rs. 900.

MARGINAL COSTING METHOD

	Rs. 2001 Rs.	Rs.	2002 Rs. Rs.	2003 Rs.
Sales	1,800		2,400	2,550
Opening stock	Nil	390	220	
Marginal cost of good produced	1,650	1,650	1,650	
	1,650	1,980	1,870	
	330	220	Nil	
Less: Closing stock (at marginal cost)	1,320		1,760	1,870
Contribution	480		640	680
Less : Fixed Expenses	300		300	300
Profit earned	180		340	380

Note 1. Closing stocks are shown on total cost basis -viz Rs. 11 per unit. 2.

Total Profit = 180+340+380 = Rs. 900

Since the entire stock is exhausted at the end of the third year, the total profit figure for the whole period (three years) remains the same under

both the methods (Rs. 900). But individually considering, every year's profit figure varies under two methods. Therefore what we can deduce from this illustration is that when there is a closing stock, the profit figure is different under the two methods - when the closing stock, is more than the opening stock in value, profit will be higher under total costing and lesser in marginal costing (e.g., year 2001). On the other hand, if the closing stock is less than the opening stock in value then lesser profit will be shown under total costing and higher profit under the marginal costing (e.g., year 2002).

4.3 APPLICATION OF MARGINAL COSTING METHOD

By providing information regarding the behaviour of costs, marginal costing

system helps management in taking certain crucial decisions involving a consideration of the costs and revenue. Management is informed of the additional costs involved in the additional production or of the savings in costs that are expected when an activity is given up. In the comparison of costs and revenue, a marginal costing technique plays vital role. The important marginal decisions that are shaped by marginal costing are discussed below:

4.3.1. Fixing the Price of Product

Price, one of the most significant factors, that determines the market for the products as well as the volume of profits for the organisation. Under normal circumstance, the price of a product must cover the total costs of that product plus a margin of profit. However, under certain special circumstances, price has to be fixed even below the total cost. For instance, when there is a general trade depression prevailing in the economy or when concessions in the prices are offered to special customers or in foreign markets, the producer has to cut the price even below the total cost of the product concerned. Under these special circumstances, the concept of marginal cost is applied to fix the prices.

A. Pricing Under Trade Depressions :

Business concerns experience difficulty in maintaining their sale during the periods of depressions i.e., sales become difficult to make. In this situation the total cost will not be the basis for fixing the price. The management

should not think that production should be stopped when prices do not cover the total cost; because despite stoppage of production, fixed expenses will have to be incurred and that will constitute a loss even when there is no business. Therefore, at least to recover these fixed costs, management will be advised to 'continue the production and to fix the price as low as to a point at which the total contribution (i.e., the margin between the sale proceeds and the variable cost) will cover a portion of the total fixed costs. If the market cannot absorb the products

even at this price then also, price must be further reduced at least to reduce the loss arising out of unrecovered fixed costs. The process of reducing the price may be continued so long as the price available for the product is higher than the marginal cost, when the price further falls to be equal to the marginal cost, then there is no point in continuing production since, the loss (fixed expenses) remains unreduced. (If the price goes below the marginal cost, the amount of loss will only be augmented)

The logic will be explained in the following illustration.

Illustration: 2

The following costs are incurred in the production of a certain product.

Rs.

Material	13
Labour	6
Variable factory Overheads	3
Marginal cost Per Unit	22
Fixed Overheads	1, 00,000

At the present level of activity, 20,000 units are being produced every month. Due to general recession in the market, the company is likely to be forced to resort to a scheme of prices reduction. If the market is to absorb the entire stock of 20,000 units, prices are to be reduced gradually as follows.

I month - Rs. 25 per unit.

II month - Rs. 23 per unit.

III month -Rs. 22 per unit.

Management seeks your advice as to the desirability of continuing production during these months of recession.

WORKINGS

Situation in I month:		Rs.
Selling Price available per unit	=	25
Total sales estimated (25 x 20,000)	=	5,00,000
Less: Marginal costs (22 x 20,000)	=	4,40,000
Total Contribution	=	60,000
Less: Fixed costs	=	1,00,000
Net loss		(-) 40,000

Production and sale of 20,000 units during this month will result in a net loss of Rs. 40,000.

Despite this, production must be continued because it contributes something (F's. 60,000) towards the recovery of fixed costs. On the other hand, if production is stopped, the entire amount of fixed costs (Rs. 1,00,000) will amount to a loss.

Situation in II month:		Rs.
Selling price available per unit	=	23
Total sales estimated (23 x 20,000)	=	4,60,000
Less : Marginal costs (22 x 20,000)	=	4,40,000
Total contribution	=	20,000
Less : Fixed costs	=	1,00,000
Net loss	=	(-) 80,000

Since the price is expected to go further down to Rs. 23 during this month the loss will increase to Rs. 80,000. However, production may still be continued order to reduce the probable loss that may decrease by fixed expenses.

Situation in II month		RS
Selling price available per		
Total Sales (22 x 20,000)	=	4,40,000
Less : Marginal cost (22 x 20,000)	=	4,40,000
Total contribution	=	Nil
Less: Fixed Costs	=	1,00,000
Net Loss	=	(-) 1 00,000

During this month, the estimated price is Rs. 22 per unit which is just equal to the marginal cost per unit, leaving no contribution therefore, the

estimated loss is Rs. 1,00,000. Under such circumstances, there is no point in continuing production because the same amount of loss will occur whether production is continued or not (if providing employment is considered, essential production may be continued without incurring any extra loss).

LOSS WHEN PRODUCTION IS CONTINUED	LOSS IF PRODUCTION IS DISCONTINUED
I Month Rs. 40, 000	1, 00, 000
II Month Rs. 80,000	1, 00,000
III Month Rs. 1,00,000	1,00,000

In the above illustration, management is advised suitably on the crucial issue of continuing activities during trade depression and seasonal recessions. This can be done by the management accountant only on the basis of his knowledge of marginal costing. For instance, if the costs have not been classified and separately treated as fixed and variable [marginal] the result of a loss in each situation would only tempt the management to stop production which would prove more disastrous. Thus marginal costing technique tells the management that it is only the marginal cost of the product and not the total cost that should form the basis for 'operate' or 'shut-down' decisions.

B. Pricing in a Special Market :

When once the fixed costs are recovered, the contribution derived from the sales of additional units goes to increase the profits for that period. This principle of marginal costing is applied in pricing the products for a special market i.e., the price may be slightly lower than the total cost of products. Under the normal circumstances, price concessions like this is not possible because that will result in a general price reduction over the entire market. So the price differentiation is adopted in special markets which are distinct and separate from normal market. Special sales may be made only in special markets like foreign markets.

C. Pricing in a Special Job : (accepting a special order)

The policy adopted in special markets is also applicable when a special order is to be accepted from special customers like the government, local authorities, schools, charitable institutions, etc. While pricing the goods

(or services), the company may show special concessions to such customers and augment their profits also thereby Seasonal railway tickets at concessional rates, concessional ticket for educational tours, student's concessional tickets in city buses are illustrative of this system of pricing.

Illustration: 3

A company has plant capacity of producing 4,500 units. At present, only 3,000 units are produced and sold in-home markets. Of late, the company can procure a special export order for 1, 000 units at a competitive price of Rs. 8 while the market price in home country is Rs. 12. Details of costs incurred are given below.

Cost Incurred for 3000 units:

		Rs.
Marginal costs [6 x 3000]	=	18,000
Fixed costs	=	9,000
Total costs	=	27,000

$$\text{Total costs per unit} = \frac{27,000}{3000} = \text{Rs. 9}$$

Cost to be incurred for 4000 units:

		RS.
Marginal costs [6 x 4000]	=	24, 000
Fixed Costs	=	9,000
Total costs	=	33,000

$$\text{Total costs per unit} = \frac{33,000}{4,000} = \text{RS. 8.25}$$

Draft a report to the management of the desirability of accepting the special order for 1,000 units at a price below the total cost per unit.

Report on accepting export order:

To

The Board of Directors

ABC Company Ltd.

Bombay.

Sirs,

Sub: Special export order acceptance desirability -report on.

At the present level of output of 3,000 units, all the fixed expenses are recovered. Since we have a surplus capacity of 1,500 units, production of additional units will not increase the fixed expenses. Thus, contribution from additional sales will only augment the present profit. Therefore, the special export order 1,000 units may be accepted though the price available (Rs. 8) is below the total costs [Rs. 8.25]. This will increase our profits by Rs. 2,000- as illustrated below;

	PRESENT SALES	ADDITIONAL EXPORTS	TOTAL
Units Produced	3,000	1,000	4,000
	Rs.	Rs.	Rs.
Sales : [12 x 3000]	36,000	(8 x 1000) 8,000	44,000
Less: Marginal cost : [6 x 3000]	18,000	(6 x 1000) 6,000	24,000
Contributions	18,000	2,000	20,000
Less: Fixed costs	-9,000	Nil	-9,000
Net profit	9,000	+2,000	11,000

Yours faithfully,
(sd).....
Management Accountant

Note: In the above illustration, the total cost per unit (at a level of 4,000 units) comes to Rs. 8.25. But the additional units (1,000) are sold at Rs. 8 per unit. Still it is profitable to sell them at this rate, which is below the total cost, because the price is above marginal cost (Rs. 6). Thus marginal cost is the basis for pricing in special markets i.e., price may be quoted below the total cost but above the marginal cost.

D. The effect of changing the Price on profits

The company cannot hope to produce and sell any number of units at the prevailing price. When the supply increases, naturally the price must be reduced to sell the entire stock. This has got a definite impact on and direct relationship with the profits.

Thus, if the output is to be increased, price has to be decreased, otherwise market may not absorb the entire stock and the competitors may encroach our field. Such a limiting factor (as the market for the product) which prevents an enterprise from earning profits indefinitely is called the “Key factor” The most common key factor is the market for sales. Sometimes, supply of raw materials, the availability of skilled labour, machine capacity or the maximum installed capacity may also turn to be the key factor. Therefore, while making plans for expansion or estimating the profits or fixing the prices, due allowance has to be given to the relevant key factor, which becomes a constraint under such circumstances.

With the help of marginal costing technique, the following questions can be answered;

1. What is the effect of a change in price on the present profits?
2. What should be the volume of sales in order to earn a given profit?
3. What will be the profit for a given volume of sales?
4. Which is the most profitable product?

When management plans to expand output, normally the cost per unit will be reduced, enabling price reduction. Again to attract a wider market, the selling price may be reduced. Therefore, the management is willing to know the effect of such price change on the profit. The following illustration explains the point.

Illustration: 4.

Ramco Ltd., is planning to expand its production of electrical iron boxes. Though it has got an installed capacity to produce 1,00,000 boxes, it is operating only at 60% of its capacity. Now it proposes to increase its production up to 90,000 units without incurring any additional fixed expenses. However, the market research shows that a reduction of 5% must be made in the present selling price to sell the entire stock of 90,000 units. Management wishes to know the effect of changes in price and volume on the recent amount of profits. Below are given the details of production and the selling price available now.

LEVEL OF ACTIVITY AT 60%

Selling price per unit Rs. 100

Marginal Costing

NOTES

MARGINAL COST:	Rs.
Direct Materials	- 32
Direct Wages	- 18
Variable Overheads	- 7
	57
Contribution	- 43
Less: fixed costs	- 23
Profit	- 20

Estimate the profit at the proposed level of activity at the reduced price.

PROFIT STATEMENT:	Rs.
Sale proceeds (90,000 x 95)	85,50,000
Marginal cost (90,000 x 57)	51,30,000
Contribution (90,000 x 38)	34,20,000
Less: Fixed costs	13,80,000
Profit	20,40,000
Estimated profit for 90,000 units	= 20,40,000
Present profit for 60,000 unit (60,000 x 20)	= 12,00,000
Increase in profit estimated	8,40,000

This increase in profit at reduced' price is due to the Increase in contribution resulting from additional units sold:

Check	Rs.
Contribution by 90,000 units (90,000 x 38)	= 34,20,000
Contribution by 60,000 units (60,000 x 43)	= 25,80,000
Increase in contribution at decreased price	= 8,40,000

4.3.2. Make or Buy decision

A manufacturing concern sometimes, has to make a decision regarding the manufacture of a particular component. To decide whether or not to manufacture the component, marginal costing technique can be used. The company has to compare the price of the component purchased from outside and the marginal cost of producing the same internally.

If the marginal cost of production is lower than the purchase price it is profitable to manufacture the part rather than purchasing. However, in practice certain other complications may arise. For instance the company may not have a surplus capacity to produce that component in which case the production of some other items will have to be stopped and that capacity can be utilised to produce that component. Under such circumstances the loss of contribution made by these items (the production of which is now stopped) should be considered as part of the marginal cost of production of the component. Sometimes the production of the component may involve some new fixed expenses. These should also be included in the marginal cost of the component. Making due allowance for these key factors a decision can be taken on this issue with the help of marginal costing technique.

Illustration: 5

A manufacturing company produces a single product utilising its full capacity for 10 hours daily. The contribution of this product is Rs. 60 per unit. A component of the product is now bought outside at Rs. 35. However, if this part is also produced in the company itself, 4 hours daily have to be spared for that purposes. Also, it is estimated that the marginal cost of production of this part will come to Rs. 20. It is desirable to make this part in the company itself by restricting the volume of production.

Report on desirability of making the part:	Rs.
Contribution of the product for 10 hrs	= 60
	$\frac{60}{10}$
Contribution of the product for one hour	= 6
Loss of contribution of this product if the part is produced (4 hours)	$4 \times 6 = 24$
Marginal cost of production of the part	$20 + 24 = 44$

The purchase price of the part is only Rs. 35 therefore; it is economical to buy the part in the market.

4.3.3. product mix [or-sale mix]

A business organisation may deal in a variety of goods. A manufacturing concern may produce more than one product. In such cases, the present capacity is used proportionately in the production of the selected

mix of the products. Consequently the question arises as to which product mix is a profitable i.e., which product must be produced in what quantity. However, the limiting factor (key factor) is the demand for each product in the mix or the product capacity. The following illustration explains this situation. **Illustration: 6**

The following are the alternative plans of the production department of a company, which manufactures 2 products. Details of costs of production are also given below.

PRODUCT-X	PRODUCT-Y	TOTAL
Plan I - 675 units + 450 units	= 1125 units	
Plan II -1350 units+ Nil	= 1350 units	
Plan III - Nil + 900 units	= 900 units	
Plan IV -900 units + 300 units	= 1200 units	

COST STATEMENT

	PRODUCT X	PRODUCT Y
Direct Materials	30	37.50
Direct Wages	15	22.50
Variable overheads	15	22.50
Marginal costs	60	82.50
Contribution	30	67.50
Selling price available	90	150.00

Fixed overheads of Rs. 20,000 for the total capacity to Produce 2,000 units of product 'X' alone 500 units of product 'Y' alone.

You are required to show which particular mix will be profitable to produce.

STATEMENT OF PROFITABLE MIX

Alternative mixes:

I. (675 UNITS OF X+ 450 UNITS OF Y)

	PRODUCT X	PRODUCT Y	TOTAL
	Rs.	Rs.	Rs.
Contribution	20,250	30,375	= 50,625
Less: Fixed expenses			= 20,000
Profit under plan I			= 30,625

II.(1350 UNITS OF X ONLY)

Contribution	40,500	+	Nil	= 40,500
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Less: Fixed Expenses				= 20,000
Profit under plan II				= 20,500
III. (900 UNITS OF Y ALONE)				
Contribution	Nil	+	60, 750	= 60,750
Less : Fixed Expenses				= 20,000
Profit under III				40,750
IV. (900 UNITS OF X+ 300 UNITS OF Y)				
Contribution	27,000	+	20,250	= 47,250
Less : Fixed Expenses				= 20,000
Profit under plan IV				= 27,250

PLANS IN THE ORDER OF PROFITABILITY	PROFIT
	Rs.
III Plan	40,750
I Plan	30,625
IV Plan	27,250
II Plan	20,500

Since, plan III is more profitable than anyone else, product Y alone can be manufactured if the market can absorb the entire stock of 900 units of ‘Y’.

PLANNING THE VOLUME OF PRODUCTION
(Or Level of Activity)

Whenever the manufacturing concerns plan to expand their output to occupy a wider market, they would like to know the effects of such an increase in the volume of production on the costs and on the profits. If the concern has already got a surplus capacity remaining idle, then the level of activity may be increased without incurring an additional fixed expenses. The total cost of production will increase because the marginal cost increases in proportion with the increase in output; likewise, if production is cut short, the total cost will decrease because of the proportional decrease in the marginal cost. However, the average cost per unit will decrease when production increases. This is because of the fact that when output is increased the constant fixed overheads are charged to more number of units which reduces the average cost per unit. It will be vice versa if the output is reduced in other words. The marginal cost is constant per unit, the fixed cost

per unit is variable with volume of production. That is why at unit level calculations fixed cost is variable and variable cost is fixed. These facts are well explained in the following.

Illustration: 7

In a programme of gradual expansion, ABC company has got the record of its past performance as follows:

YEARS	2000	2001	2002
Level of Activity	60%	70%	80%
Units Produced	1,800	2,100	2,400
Costs incurred	Rs.	Rs.	Rs.
Direct Materials	36,000	42,000	48,000
Direct Labour	10,800	12,600	14,400
Production overheads	19,200	20,400	21,600
Total cost of production	66,000	75,000	84,000

For the year 2001, the company makes an ambitious plant to expand its level of activity up to 90%. In this connection, it is estimated that no further fixed expenses will be incurred at the proposed level of activity. Management requires the following data at this proposed level to finalise the production budget.

- 1. The total marginal costs of production.
- 2. The average marginal cost per unit.
- 3. The total cost of production
- 4. The average [total] cost per unit

ESTIMATED COST STATEMENT FOR THE YEAR 2003

LEVEL OF ACTIVITY	90% (2700 Units)	
	TOTAL	PER UNIT
COST ESTIMATES	Rs.	Rs.
Direct Materials	54,000	20
Direct Labour	16,200	6
Variable Overheads	10,800	4
Marginal cost.	81,000	30
Fixed overheads	12,000	4.44
Total cost of production	93,000	34.44

NOTES

Notes:

(a) Direct materials and direct labour will increase proportionately with output. For 10% increase in the level of activity Rs. 6,000 materials and Rs. 1,800 labour have increased.

(b) In the given data, production overheads have not been separated as fixed and variable. But a careful analysis of the figures will reveal this 'secret' of combination. That is, overheads increase proportionately by Rs. 1,200 for every 10% increase in output. This 10% level of activity represents 300 units.

Therefore, a variable overhead for one unit is Rs. 4 i.e., . For 2,700 units, variable overheads amount to Rs.1 0,800. Fixed overheads can be easily calculated by deducting the variable overheads from the total production overheads at this level of output [i.e., 22,800- 10,800 = 12,000]. Otherwise fixed expenses can also be found out by taking the total production overheads at cm earlier level [say at 60%] and the deducting from it the relevant variable overheads [e.g., at 60% levels, total overheads Rs. 19,200 and variable overheads are Rs. 7,200; therefore fixed overheads are Rs.12,000].

(C) In this illustration, if we work out the total cost per unit will be as follows:

	60%	70%	80%	90%
	Rs. P.	Rs. P.	Rs. P.	Rs. P.
Marginal cost per unit	30.00	30.00	30.00	30.00
Fixed cost per unit	6.67	5.71	5.00	4.44
Total cost per unit	36.67	35.71	35.00	34.44

This table shows that marginal cost remains constant at unit level while fixed cost becomes variable per unit. This is because of fact that the total fixed costs remain constant irrespective of changes in output. Thus, whenever, output is increased, more and more units share the burden of fixed cost, resulting in a gradual decrease in the total cost per unit till the entire capacity is utilised. Afterwards, further expansion will require new fixed assets involving additional fixed expenses. On the other hand, total variable cost vary with production proportionately. Therefore, at unit level they remain constant.

4.4 ADVANTAGES OF MARGINAL COSTING

1. Marginal costing method clearly explains the nature and behaviour of the various costs incurred in the production of a particular product.
2. Marginal cost statements provide the data regarding the cost -volume profit factors that are required by the management for profit planning.
3. Marginal cost statements and reports give a clear picture regarding cost of production and they are easier for the management to understand. For example, the impact of fixed costs on the volume of profit is well depicted by summarising the fixed costs in the profit statements.
4. The contribution facilitates the relative appraisal of the profitability of the various products, product mixes, sales territories etc. This is feasible because' under the marginal costing technique, costs are classified as variable and fixed and the incidence of fixed costs are considered separately.
5. Marginal costing is contributing to cost control plan such as standard costing and flexible budgeting.
6. As illustrated earlier, marginal costing method is of immense use to the management in its area of decision making as in fixing the prices, determining the sales mix, closing down a business venture. Planning the level of activities, buying a component from outside etc.

limitations of marginal costing:

1. It is always difficult to bifurcate all the elements of costs rigidly into fixed and variable ones. Very often arbitrary classifications are made to segregate the fixed and variable costs.
2. In the long run, all the costs are variable i.e., even the fixed costs will vary at different stages in the long term. Therefore, long range pricing and other policy decisions cannot rely much on the marginal cost analysis.
3. Valuation of inventories and profit estimations on marginal costing basis are subjected to by tax authorities.

4.5 COST -VOLUME -PROFIT ANALYSIS

Profit -maximisation is the ultimate objective of all business organisations. Therefore, every organisation tries to bring under its control all those factors which influence the profits of its business. The amount of profit is determined by the following factors:

- 1) Price of the product
- 2) Volume of sales
- 3) Cost of production -Fixed & variable
- 4) Sales mix of the product

Everyone of these factors can influence the amount of profit that can be earned by the business concern. It follows that a change in any of these factors can affect the profit volume. It is said, "profit is the result of the interplay of cost, price and volume". Therefore, profit planning is based on these three vital factors. As such, cost- volume -profit analysis is an attempt at systematic study of the relationship existing among these various factors. It analyses the effect of a change or changes in these factors on the profits. Thus, it is an integral part of profit planning. Management is told what may happen in terms of profit if (a) the price is reduced or increased (b) the volume of sales is larger or lesser; (c) costs are reduced or incurred more etc. This study is also called the Break Even Analysis, which tells the management how much sales (both in units and in value) should be effected to avoid a loss at the least.

BREAK -EVEN POINT

When the total costs incurred and the total value of sales made are equal, the organisation attains a stage of no loss and no profit i.e., the sale proceeds are just enough to cover the total costs (both the fixed costs and variable costs). This position is called the break-even point. If sales go up beyond the Break-even point, organisation makes a profit; if they come down, a loss is incurred. Thus, sales at break-even point is the minimum amount of sales that must be effected in order to avoid any loss. This figure is very useful for accountants in studying the profit factors. In this context a knowledge of the marginal costing method is essential for the study of break-even analysis. It may be said that break -even analysis is simply an extension of the principles of marginal costing.

BREAK -EVEN CHART

The break-even point can be easily illustrated by means of a chart. This break-even chart is only a primary form of profit graph. It is a useful device for supplying information to the management on the effects of changes in costs, volume and revenue.

A break even chart can be constructed only when sufficient data regarding the selling price, sales volume; variable cost per unit and fixed costs are available. Let us now construct a break -even chart on the basis of the following information (imaginary).

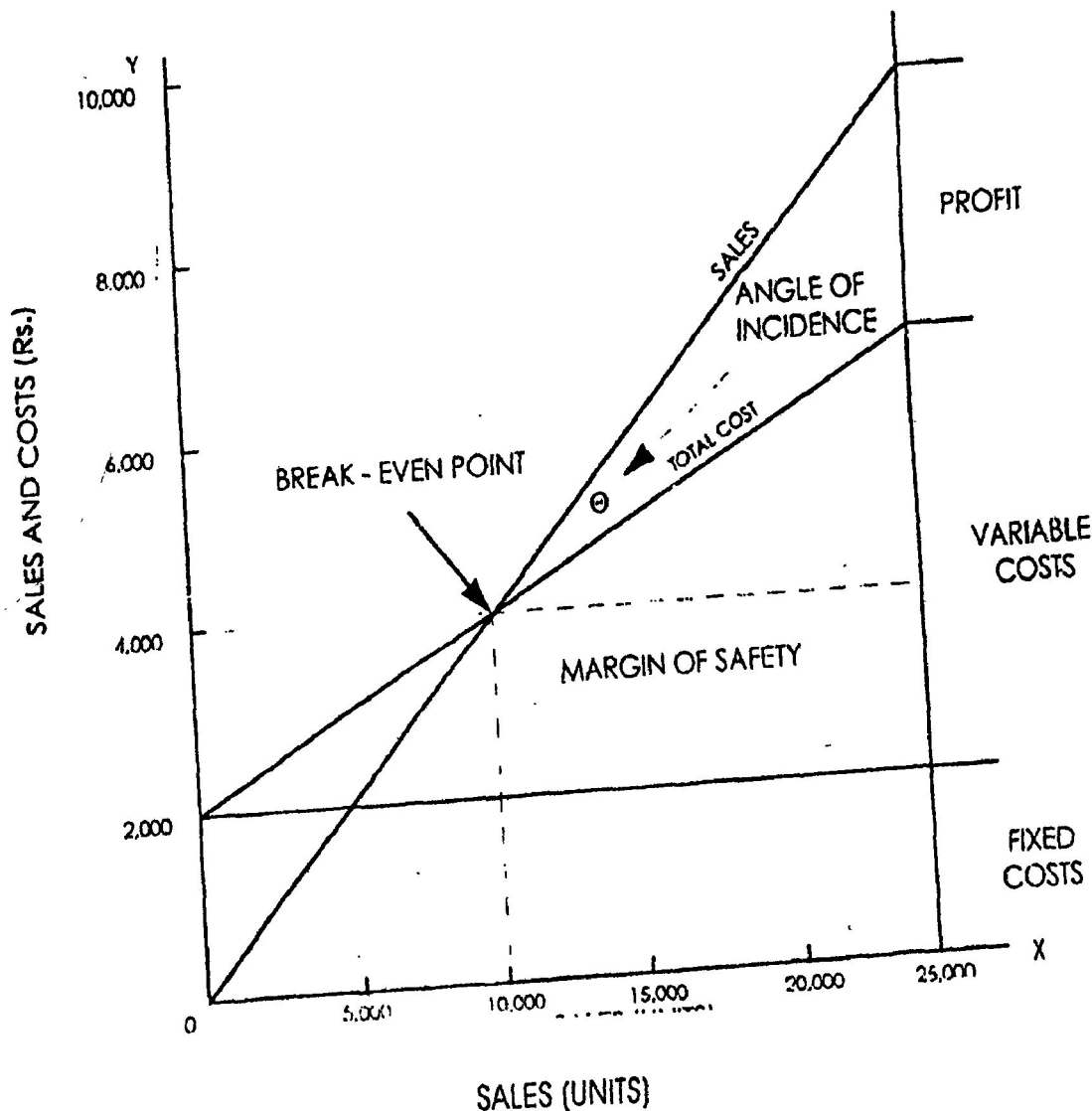
Selling price -Re. 0.40 per unit

Variable cost -Re. 0.20 per unit

Fixed costs -Rs. 2,000

Sales volume -25,000 units

From these data, we can derive in the following table to construct the chart.



Note : When 10,000 units are produced and sold, the total cost of production and total revenue are just equal. This stage of no loss and no profit is called "Break – even Sales". This break-even point is depicted in the chart both in terms of quantity (10,000 units) and value (Rs. 4,000).

NOTES

HOW TO CONSTRUCT A BREAK EVEN CHART

- 1. Measure the volume of sales (units) on the 'X' axis (horizontal axis) ;
- 2. Measure both the costs and sales value on the 'Y' axis (vertical axis)
- 3. Mark the fixed costs (Rs. 2,000) on the 'Y' axis and from that (Fixed costs remain constant normally at varying levels of output up to a certain maximum level; therefore, the fixed cost line is horizontal)
- 4. Take the figures of maximum sales volume (25,000 units) and the corresponding total cost (Rs. 7,000) and locate the point representing these two figures in the chart. Now draw a straight line connecting this point with the origin of fixed cost-line (on the axis) this straight line is the total cost line.
- 5. Similarly, take the maximum sales volume (25,000 units) and its corresponding value (Rs. 10,000) and locate the corresponding point in the chart. This point must now be connected with the zero point by a straight line. This straight line is the sales line.
- 6. Finally, locate the point at which the total cost line at the sales line cut each other. This point is the break -even point i.e., the value of sales at this level is just equal to the total cost, a situation of no loss and no profit. (in the chart this point represents a sales value of Rs. 4,000 and a total cost of Rs. 4,000).

MARGIN OF SAFETY

In the chart, we find that the actual sales value amounts to Rs. 10,000 while the break -even sales value is only Rs. 4,000. The difference of Rs. 6,000 is called margin of safety. Thus, margin of safety is the excess of actual sales over the break even sales. In this context, break-even sales figure functions as a red signal i.e., if actual sales fall below this minimum amount (break -even sales) the company will incur losses. Therefore, every organisation must be able to maintain a rcasonable margin of safety. Higher the margin of safety, more will be the profits for the organisation because, only after reaching this break -even point sales bring forth profits.

Example:	Rs.
Actual Sales	10,000
Break- even Sales	4,000
Margin of Safety	6,000

If the sales value falls by Rs. 6,000, the company reaches the break - even point (i.e., sales come down to Rs. 4,000 making neither profit nor loss). A further fall in sales will result in a loss. This indicates that sales should not fall down beyond the extent of margin of safety; otherwise loss will occur. Therefore, this concept (margin of safety) is very useful in times of depression when the sales are gradually declining.

What is a reasonable margin of safety? It depends upon the cost and level of activity; for instance, a low margin of safety usually indicates either high fixed overheads or low contribution of the product. Expansion of output and increased sales can increase the margin provided that (a) the company has got surplus capacity to expand production without incurring additional fixed expenses and that (b) the market can absorb the additional units without causing much additional expenses on sales campaigns, higher the margin, the more will be the company's capacity to withstand the trade depressions and vice versa. For example, if the margin of safety is very low, even a slight decline in sales will prove to be disastrous. Therefore, every business organisation tries to have as great a margin of safety as is feasible within its means.

In the chart given earlier, the margin of safety is shown in terms of sales units (denoted by the dotted double-headed arrow) it can also be, and normally is, calculated in terms of money value. For example, if a dotted line is drawn from the break -even point vertically upward to the point of maximum sales, it, will indicate the margin of safety in terms of rupees. Thus,

Margin of safety = Actual sales – Break – even Sales.

The margin of safety may also be expressed as percentage.

$$\text{Margin of Safety} = \frac{\text{Actual Sales} - \text{Break-even sales}}{\text{Actual sales}} \times 100$$

ANGLE OF INCIDENCE

Angle of incidence indicates the rate at which profit is earned in an organisation after crossing the break -even point. In a break even chart, the angle at which the sales line cuts the total cost line is called the angle of incidence.

While the point at which the sales and total cost lines cut each other is called the break-even point, the angle at which these lines intersect is called the angle of incidence. Sales after break even point will bring profit; therefore, this angle indicates the profit earning rate of the business. Hence, it is also called profit angle or profit path. In this sense, the concept of angle of incidence is an important tool for management in times of expansion of the market for the product.

Every business concern would like to have as large an angle of incidence as possible because a wide angle represents a higher rate of profit earning and a narrow angle implies relatively a low rate of return. The consideration of the angle of incidence arises only after meeting the entire amount of fixed costs; therefore, the nature of the angle depends upon the incidence of variable costs. In other words, a narrow angle indicates that variable costs form relatively a large part of the cost of the product and vice versa.

Profit - Volume Ratio (P.V. Ratio)

This indicates the relation between the sales value and its corresponding contribution. This explains the rate at which sales are contributing towards the recovery of fixed costs and profit. A high ratio means that the break-even point is achieved soon after which profit is earned at a higher rate and a low ratio implies the opposite. The following formula calculates this ratio.

$$\text{P.V. R.} = \frac{\text{Contribution}}{\text{Sales Value}} = \frac{\text{Sales} - \text{Variable costs}}{\text{Sales}}$$

When it is expressed as a percentage, it will be

$$\text{P.V. R.} = \frac{S - V}{S} \times 100 \text{ or } \frac{C}{S} \times 100$$

From the above discussion, we can understand that the term "Profit Volume Ratio" is rather misleading, because the term profit where actually means the contribution of the sales and the term volume actually means sales value and

not the sales volume. Therefore, property spacing it should be called Contribution Sale Ratio (C.S.R.) However, since the term P.V.R is widely used, we also use the same name in our lessons. Every organisation strives to improve their P. V. ratio either by reducing the variable cost per unit or by increasing the selling price per unit whichever is possible. A high P.V. ratio earns profits at an accelerated rate and vice versa. The P.V. ratio can be depicted graphically. The following chart illustrates the trend of a business which enjoys a 40% P.V. ratio:

Data relating to the chart:

	Rs.
Sales	2,00,000
Variable cost	1,20,000
Fixed cost	50,000
Profit	30,000

$$\text{P.V.R} = \frac{C}{S} \times 100$$

$$= \frac{80,000}{2,00,000} \times 100 = 40\%$$

HOW TO CONSTRUCT A PROFIT -VOLUME CHART

1. Use the horizontal axis for the sales value and the vertical axis for the fixed costs and profit.
2. Measure the sales value (in terms of Rupees) on the horizontal axis by drawing "Sales line" just in the middle of the chart so as to cut the graph into two areas, the area above the line representing the "profit area" and the area below the line representing the loss area".
3. Measure the fixed costs on the vertical axis below the sales line (in the loss area) measuring from the zero point (see the chart).
4. Measure the profit on the vertical axis above the sales line (in the profit area).

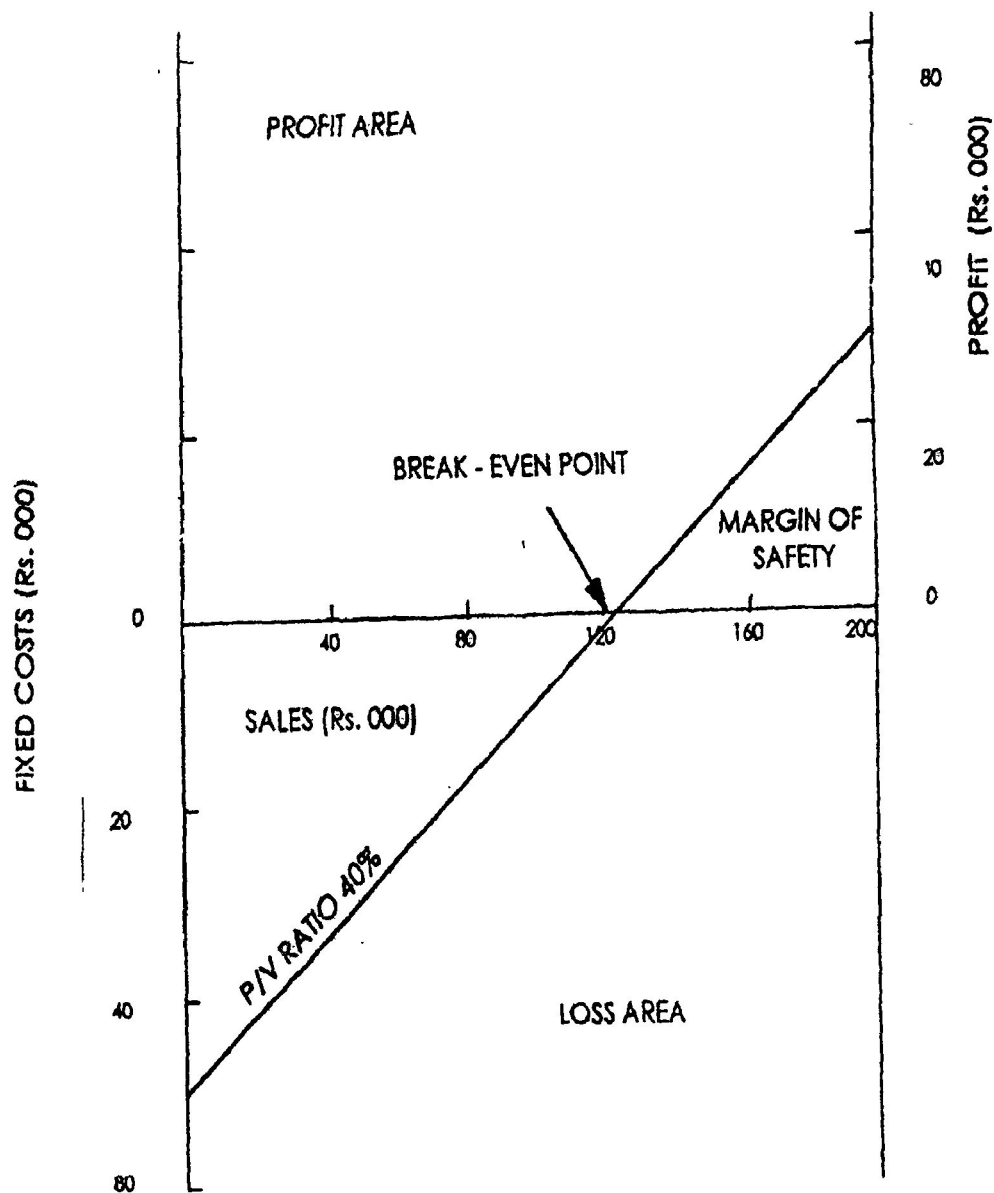
Check your progress

1. State True or False

- a) Marginal cost is the variable cost per unit.
- b) Excess of sales revenue over marginal cost of sales is known as net profit.
- c) Contribution is the same as net profit.
- d) Contribution – fixed cost = Net profit.
- e) Variable cost per unit is fixed for any level of activity.

5. Draw a straight line connecting the points of total fixed costs and the profit volume of the maximum sales.

For instance, in the chart shown above the total fixed costs amount to Rs. 50,000 and the volume of profit at maximum sales (Rs. 2,00,000) is Rs. 30,000. A straight line has been drawn between these two points shown on either side of the vertical axis. This P.V.Ratio line intersects the sales line at a point representing sale of Rs. 1,25,000. This is the Break Even Sales. After meeting this point, the P .V. ratio line represents profits at various levels of sales. At the maximum sales of Rs. 2,00,000 the P.V. ratio line reaches the point of Rs. 30,000 which is the present volume of profit. This Chart also shows the margin of safety which is the difference between the break even sales and the maximum sales.



PROFIT VOLUME CHART

SIGNIFICANCE OF PROFIT -VOLUME CHART

This chart differs from other types of break -even charts in the following respects.

1. In the place of the total costs and fixed costs lines only one line (i.e., profit -volume ratio line) is drawn.
2. Sales line is drawn across the graph horizontally to separate the areas of profits and losses.
3. In addition to showing the break -even sales and the maximum profit, this chart shows also the possible losses at various levels, if sales go down below the break -even volume. The two areas profit and loss clearly depicts the

position of the company at various levels at providing this additional information.

4. The profit -volume ratio line may be considered as a contribution line below

the break -even point and as a profit line above the point. This chart is simple to understand and easy to construct.

FORMULA:

BREAK -EVEN POINT (B.E.P.)

The break -even point sales will be equal to the total costs of production.

B.E.P. Sales = Fixed costs + Variable costs.

$S = F + V(\text{at B.'E. P.})$

i.e., $S - V = F$

$C = F (\text{at B.E.P.})$

Therefore at a given volume of sales:

$$\text{B.E.P. Sales} = F \frac{S}{C} \text{ or } F \frac{S}{S - V}$$

Example. I

Sales 50,000 units @ Re. 1 . per unit	50,000
Variable costs Re. 0.60 per unit	30,000
Fixed Cost	10,000
Profit	10,000

$$\text{B. E. P.} = \frac{S \times F}{S - V} = \frac{10,000 \times 50,000}{50,000 - 30,000}$$

$$= \frac{10,000 \times 50,000}{20,000}$$

$$= \text{Rs. } 25,000$$

This can be checked in the following manner:

B.E.P Sales = Fixed costs + Variable costs

Rs. 25,000 = Rs.10,000 + (25,000 x Re. 0.60)

$$= \text{Rs. } 10,000 + \text{Rs. } 15,000$$

$$= \text{Rs. } 25,000$$

FURTHER CALCULATIONS

The above formula is the primary stage in the calculation of break even point. Further refinements are made in the formula by making use of the profit volume ratio as shown below:

$$\text{B.E.P} = \frac{F \times S}{S - V}$$

$$= F \times \frac{S}{C}$$

$$\text{PV ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{C}{S} \times 100$$

Example: 2

	Rs.
Sales	1,00,000
Variable costs	60,000
Contribution	40,000
Fixed costs	20,000
Profit	20,000

$$1. \text{ Profit volume ratio} = \frac{C}{S} \times 100 = \frac{40,000}{1,00,000} \times 100$$

$$\text{P.V.R.} = 40\%$$

$$2. \text{ Break even point} = \frac{F}{\text{P.V.R.}} = \frac{20,000}{40\%} = \frac{20,000}{40} \times 100$$

$$= \text{Rs. } 50,000$$

B.E.P Sales is Rs. 50,000

Check

Sales 50,000

Variable cost 30,000

Contribution	20,000
Fixed Costs	20,000
Profit or Loss	Nil

In the above two examples, the formula are used to calculate the break - even point only in terms of sales value (i.e., so much of sales in terms of Rupees). If we want to know the number of units that should be sold, to reach the break -even point (i.e., break- even sales in terms of units) we cannot get the answer directly with the help, of these formula unless the selling price per unit of the product is given. If the unit price is given, then the break -even sales units can be found out by dividing the BEP sales value by the unit price. Using the unit price, a formula may be developed as follows to calculate this figure straight away.

$$\text{Break-even sales (units)} = \frac{F}{S - V}$$

$$= \frac{\text{Fixed Costs}}{\text{Contribution per unit}}$$

(F = Fixed costs; S= Selling price per unit; V = Variable cost per unit)

Example: 3

Selling price per unit	Rs. 10
Variable cost per unit	Rs. 6
Contribution per unit	Rs. 4
Fixed costs	Rs. 20,000

$$\text{Break- even point Sales (units)} = \frac{F}{S - V} = \frac{20,000}{10 - 6} = 5,000 \text{ units}$$

Some authors may also use a different formula to calculate the break even sales value. The formula is:

$$\frac{\frac{F}{1 - V}}{SP}$$

When; F = Fixed costs

1= Number one

V = Variable cost per unit (or total)

SP = Price per unit (or total sales value)

Though, the formula can be used to calculate the B.E.P. sales value; the original

formula = $\frac{\text{Fixed Costs}}{\text{P.V. ratio}}$ = is easier for calculations and is used in all our illustrations in this lesson.

II Margin of Safety

We have seen that Margin of safety is equal to actual sales minus break – even sales. At a given level of activity of safety the Margin can be calculated with the help of the following formula:

$$\text{M/S.} = \frac{\text{Profit x Sales}}{\text{Sales} - \text{Variable Cost}}$$

$$\text{M/S.} = \frac{\text{P x S}}{\text{S} - \text{V}}$$

Using the profit -volume ratio; this formula-can be further refined as below:

$$\text{M/s} = \frac{\text{P}}{\text{P.V. ratio}}$$

Note: In the above formula 'P' refers to the volume of profit at the given level of output, while the P/V ratio actually means the contribution ratio. Using our examples we can calculate the Margin of safety as follows

$$\text{Margin of Safety} = \frac{\text{P}}{\text{P.V. ratio}} = \frac{20,000}{40\%} = \frac{20,000}{40} \times 100$$

$$\text{M/S} = \text{Rs. } 50,000$$

Check:

	Rs.
Total Sales	1,00,000
BE P Sales	50,000
Margin of Safety	50,000

Illustration: 1

The accountant of ABC Company Ltd., provides the following data for the year 2003.

	Rs.
Sales 15,000 units @ Rs. 4 per unit	60,000
Variable cost @ Rs. 2 per unit (50%)	30,000
Contribution	30,000
Less Fixed costs	18,000
Profit	12,000,

You are required to find out the following

- (a) Profit Volume ratio
- (b) Break -Even Point and
- (c) Margin of safety

WORKINGS:

(a) Profit Volume Ratio = $\frac{S - V}{S} \times 100$

P. V. R. = $\frac{60,000 - 30,000}{60,000} \times 100 = 50\%$

(b) Break even point = $\frac{\text{Fixed Costs}}{\text{P / V ratio}}$

$\frac{18,000}{50\%} = \frac{18,000}{50} \times 100 = \text{Rs. } 36,000$

$$(c) \text{ Margin of Safety} = \frac{\text{Profit}}{\text{P / V ratio}}$$

$$\text{M/s} = \frac{12,000}{50\%} = \frac{12,000}{50} \times 100 = \text{Rs. } 24,000$$

The results can be verified as follows:

Break Even Point Sales is Rs. 36,000 At this level the total costs are -

Fixed costs = Rs. 18,000

Variable costs = Rs. 18,000 (50% of sales value)

Total cost = Rs. 36,000

Margin of Safety = Rs. 60,000 - 36,000

= Rs. 24,000

Sales beyond break -even point constitute the Margin of safety

M/s = Actual Sales - BEP

= 60,000 - 36,000

= Rs. 24,000

From this illustration, we understand how useful the P.V. Ratio is for easy calculation of Break - Even Point and Margin of Safety.

Illustration: 2

Jana Company Ltd., produces a uniform product, 'X'. Out of competition, it is forced to reduce the price of its product. The Company plans to announce a price reduction of 10 % to capture more market. The accountant gives the relevant data as follows:

Sales 20,000 units of Rs. 20 each = 4,00,000

Less variable costs Rs. 15 each = 3,00,000

Contribution = 1,00,000

Less Fixed expenses = 40 000

Profit = 60,000

Though, price is reduced the company wants to maintain the volume of profit through increased sales. Therefore, it wants to know the required volume of sales. Assume that fixed expenses will remain constant at the new level of activity.

$$\text{Profit -volume Ratio} = \frac{S - V}{S} \times 100$$

$$= \frac{1,00,000}{4,00,000} \times 100 = 25\%$$

Since the price is going to be reduced, we have to find out the P.V. Ratio for the same volume of sales (20,000 units) but at the reduced price rate; then only the required volume of sales can be calculated.

Sales (20,000 x 18)	3,60,000
Less Variable costs (20,000 x 15)	3,00,000
Contribution	60,000

$$\text{P.V. Ratio} = \frac{S - V}{S} \times 100$$

$$= \frac{60,000}{3,60,000} \times 100 = 16 \frac{2}{3}\%$$

At this P.V. Ratio, the company wants to maintain the same Profit of Rs. 60,000. Therefore, the required sales will be

$$\text{Total Sales} = \text{Break- Even Sales} + \text{Margin of Safety}$$

$$= \frac{F}{P/V \text{ Ratio}} + \frac{P}{P/V \text{ Ratio}}$$

$$= \frac{F + P}{P/V \text{ Ratio}}$$

$$= \frac{\text{Fixed Cost} + \text{Estimated Profit}}{P.V. \text{ Ratio}}$$

$$= \frac{40,000 + 60,000}{16 \frac{2}{3}\%}$$

$$= \frac{1,00,000}{162/3} \times 100 = \frac{1,00,000 \times 3 \times 100}{50}$$

= Rs. 6,00,000

This can be checked in the following manner :

Sales value = Rs. 6,00,000

Unit Price = Rs. 18

$$\text{Units sold} = \frac{6,00,000}{18} = 33,333 \text{ units.}$$

Hence,

Rs.

Sales value	= 6,00,000
Less Variable cost (33,333 x 15)	= 5,00,000
Contribution	= 1,00,000
Less Fixed cost,	= 40,000
Profit	60,000

Illustration: 3

Bharath Company Ltd., is manufacturing a uniform product. At present, the company incurs the expenses as follows:

Variable cost per unit = Rs.6

Fixed expenses for one year = Rs. 35,000

Considering the price range of substitutes and of similar goods produced by other concerns, the company has fixed the selling price at Rs. 10 per unit. Management considers that Rs. 30,000 as profit will be a fair return on investment for the year. Assuming that the fixed costs, remain constant for the next trading period, find out the volume of sales required to earn the desired profit.

WORKINGS:

	Rs.
Selling Price per unit.	10
Less: Variable cost per unit	6
Contribution	4

$$\text{Profit volume Ratio} = \frac{S - V}{S} \times 100$$

$$\frac{4}{10} \times 100 = 40\%$$

Desired Profit = Rs. 30,000

$$\text{Required volume of Sales} = \frac{\text{Fixed Cost} + \text{Desired Profit}}{\text{P / V Ratio}}$$

$$= \frac{35,000 + 30,000}{40\%}$$

$$= \frac{65,000}{40} \times 100 = 1,62,500$$

Required Sales value = RS. 1,62,500

This can be verified as follows:

Required Sales value = Rs. 1, 62,500

Selling price per unit = Rs. 10

$$\text{Number of units to be sold} = \frac{1,62,500}{10} = 16,250 \text{ units}$$

Hence:

	Rs.
Sales	1,62,500
Less Variable cost (16,250 x 6)	97,500
Contribution	65,000
Less Fixed overheads	35,000
Profit (as desired)	30,000

4.6 PROFIT FACTORS AND BREAK -EVEN CALCULATIONS

We have already seen that there are atleast five major factors that influence the volume of profit for an organisation. They are (1) selling price (2) units sold (3) incidence of variable costs (4) amount of fixed costs and (5) the sales mix of the various products produced and sold by the company.

Check your progress

2. Fill in the blanks

- Marginal cost in also called _____ cost
- Marginal costing is a tool for managerial _____
- Direct costs + variable over heads = _____ cost
- Sales revenue – variable cost = _____
- Fixed cost + profit = _____

A change in anyone of these profit factors will affect the Profit volume. For example, profit will be Increased by the following changes

1. an increase in selling price.
2. an increase in the number of units sold.
3. a decrease in costs (variable or fixed).

On the other hand, profit will be decreased by:

1. a decrease in selling price.
2. a decrease in number of units sold.
3. an increase in costs (variable or fixed)

The effects of these changes can be well depicted by means of break - even charts. On the basis of an illustration suitable charts are constructed in the following pages.

Illustration: 4

Sincere Company Ltd., is placed in the following position at present:

	Rs.
Sales (20,000 units @ Rs. 10 each)	2,00,000
Variable costs @ Rs. 5 per unit	1,00,000
Contribution	
Fixed costs 60,000	
Profit	40,000

You are required to calculate the Break Even point and Margin of safety and also to provide information to the management regarding the possible effects of the following contingencies (each to be considered separately.)

1. Fixed costs increase by 10%
2. Variable costs decrease by 20%
3. Selling price is increased by 20%
4. Sales volume is increased by 10%

Suitable charts may be presented showing the effect of these change in profit factors

WORKINGS:

$$(a) \text{ Break Even Point} = \frac{\text{Fixed Costs} \times \text{Sales}}{\text{Sales} - \text{Variable Costs}} = \frac{P \times S}{S - V}$$

$$BEP = \frac{60,000 \times 2,00,000}{1,00,000} = \text{Rs. } 1,20,000$$

$$(b) \text{ Margin of safety} = \frac{\text{Profit} \times \text{Sales}}{\text{Sales} - \text{Variable costs}} = \frac{40,000 \times 2,00,000}{1,00,000}$$

$$M/s = \text{Rs. } 80,000$$

Effects of changes in profit factors:

(1) FIXED COSTS INCREASE BY 10%

$$\text{So the new fixed costs} = 60,000 + 60,000 \times \frac{10}{100} \\ = \text{Rs. } 66,000$$

Since fixed costs have increased by Rs. 6,000 profit will be reduced to the same extent (because other factors are remaining constant). This can be verified as follows:

	Rs.
Sales	= 2,00,000
Variable cost	= 1,00,000
Contribution	= 1,00,000
Fixed costs	= 66,000
Profit	= 34,000 = (40,000 - 6,000)

Note: Since fixed costs have increased the break -even sales will also be increased, in the chart shown below, the total costs line and the sales line intersect at a point indicating break -even sales of Rs. 1,32,000. Thus, break -even sales is increased by Rs. 12,000 (i.e., to absorb the additional fixed costs of Rs. 6,000. The company has to effect the sales for Rs. 12,000 more and reach the B. E. P.)

This can be checked as follows:

$$B.E.P = F \times \frac{S}{C}$$

$$= 66,000 \times \frac{2,00,000}{1,00,000}$$

$$= \text{Rs. } 1,32,000$$

i.e., an increase of Rs. 12,000

At the present level of sales, the break even sales have increased. Therefore, the remaining margin (Margin of Safety) will be decreased i.e.,

$$M/S = P \times = 34,000 \times$$

$$= \text{Rs. } 68,000 \text{ (i.e., a decreased of Rs. } 12,000)$$

(2) EFFECTS OF A DECREASE IN VARIABLE COST BY 20%

When the variable costs decrease, the contribution ratio (P.V. Ratio) increases, thereby reducing the break even sales volume and increasing profits and Margin of Safety. That is, the company reaches the break even point sooner than before, and after that stage profit is earned. at an accelerated rate. In our illustration, 20% decrease in variable cost will give the following results.

(a) Increase in Profits:

	Rs.
Sales	2,00,000
Variable Cost	80,000
Contribution	1, 20,000
Fixed costs	60,000
Profit	60,000
New Profit	Rs. 60,000

Original Profit Rs. 40,000

Additional Profit Rs. 20,000

b) Decrease in the break -even point:

Since a reduced variable cost leaves more contribution, fixed cost are absorbed sooner. So the break -even volume is reduced as follows:

$$\text{B.E.P.} = \frac{P \times S}{C}$$

$$= 60,000 \times \frac{2,00,000}{1,20,000}$$

NOTES

$$= \text{Rs. } 1,00,000$$

$$\text{New B.E.P.} = \text{Rs. } 1,00,000$$

$$\text{Original B.E.P.} = \text{Rs. } 1,20,000$$

$$\text{Decrease in B.E.P.} = \text{Rs. } 20,000$$

(c) Increase in Margin of Safety:

At the same volume of sales, fixed costs are recovered sooner.
Therefore Margin of Safety will be increased as follows:

$$\text{Margin of Safety} = P \times \frac{S}{C}$$

$$= \frac{60,000 \times 2,00,000}{1,20,000}$$

$$\text{M/S} = \text{Rs. } 1,00,000$$

$$\text{Original Margin of Safety} = \text{Rs. } 80,000$$

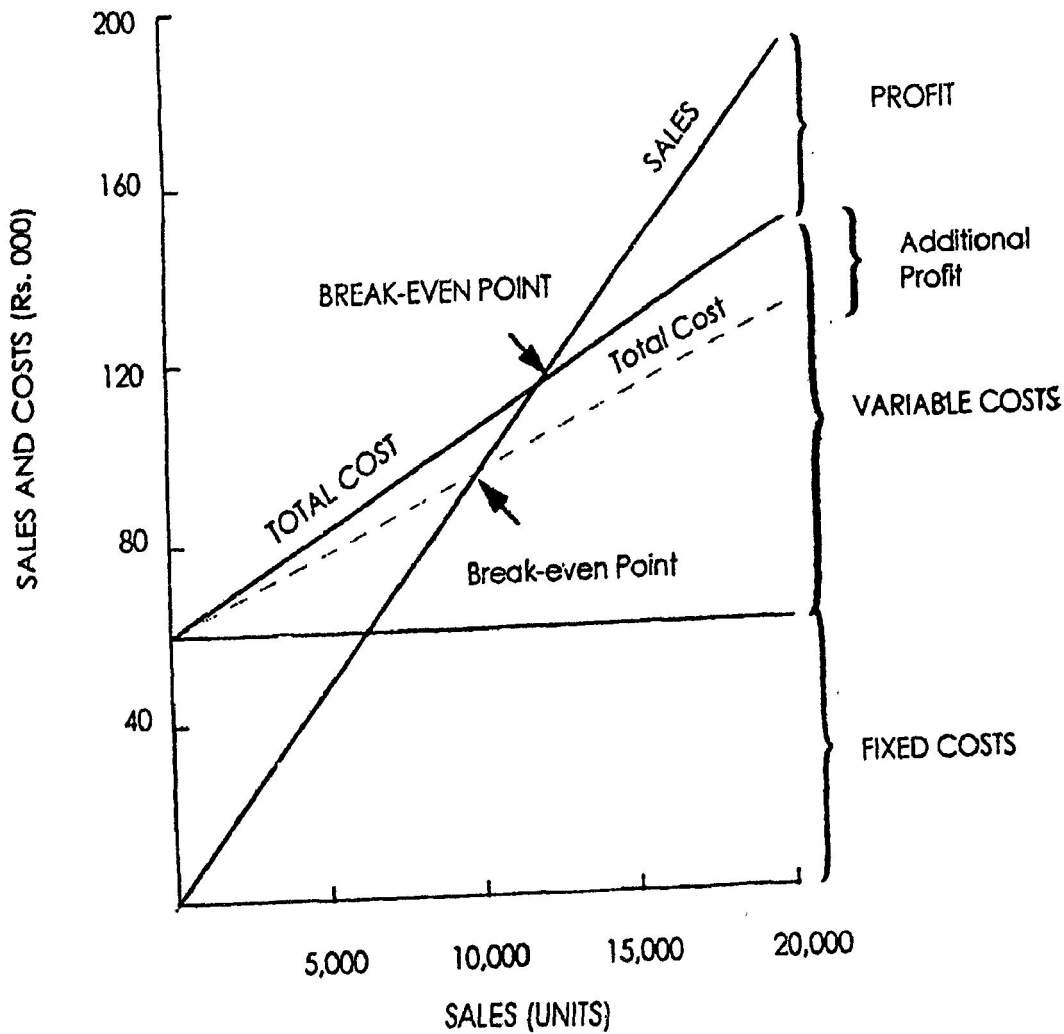
$$\text{Increase in Margin of safety} = \text{Rs. } 20,000$$

Thus, a decrease in marginal cost by 20% results in an additional contribution of Rs. 20,000 with the consequences of:

- a) Rs. 20,000 increase in profit
- b) Rs. 20,000 increase in Margin of Safety and
- c) Rs. 20,000 decrease in B.E.P. Sales

These effects are well depicted in the following chart:

BREAK-EVEN CHART SHOWING EFFECT OF 20% DECREASE IN VARIABLE COSTS



(3) EFFECTS OF INCREASE IN THE SELLING PRICE BY 20%

Other factors remaining constant, the price of the products increased by 20% (i.e., from Rs. 10 to Rs. 12). Therefore, obviously profit will be increased as follows:

	Rs.
Sales (20,000 units @ Rs. 12 each)	2,40,000
Variable cost (remaining constant as Rs. 5 per unit)	1,00,000
Contribution	1,40,000
Fixed overheads	60,000
New Profit	80,000
Original Profit	40,000
(a) Additional Profit	40,000
Break- even point = $F \times = 60,000 \times$	
New B.E.P.	= Rs. 1,02,857
Original B.E.P.	= Rs. 1,20,000

(b) Decrease in B.E.P. = Rs. 17,143

Margin of Safety = $P \times 80,000$

Margin is Safety = Rs. 1,37,143

Original Margin of safety = Rs. 80,000

(c) Increase in Margin of Safety = Rs. 57,143

(4) EFFECTS OF AN EXPANSION IN SALES VOLUME BY 10%

With the same costs at the price, more number of units is sold now. Therefore, the volume of profit will be increased with extended Margin of safety. However, the break even position which remain constant because the contribution rate (PN Ratio) does not change. The following will be, the result.

	Rs.
Sales (22,000 units x Rs. 10)	= 2,20,000
Variable costs (22,000 x Rs.5)	= 1,10,000
Contribution	= 1,10,000
Fixed costs	= 60,000
Profit	= 50,000
Original Profit	40,000
(a) Additional Profit	10,000

Break- even point $F \times \frac{S}{C}$

$$= 60,000 \times \frac{2,20,000}{1,10,000}$$

B. E. P. = Rs. 1,20,000

(No change in this position)

Margin of Safety $P \times 50,000$

Margin of Safety = Rs. 1,00,000

Original margin of Safety = Rs. 80,000

(b) Increase in the margin = Rs. 20,000

Sales Mix

A Company may produce and sell more than one product. Each product may contribute (towards fixed costs and profit) in different ratios.

The cumulative effect to the contributions made by the products determine the amount of profit. Among these products one may contribute more than the other product. However, the profitable product alone cannot be produced by eliminating the others, because there may be limiting factors like the restricted market for the product, necessity of utilising the scraps in the production of by- products and the like.

Still, the mix of the product can be so altered as to give the maximum possible profit within the limitations by these products. Therefore, it is not enough to provide the management with the information which will show the information of overall profit earned by all the products together, it should also be informed of the individual contribution of the product and of the effect of any changes in the mix on the profit earned.

For this purpose, the profit -volume chart can also be used to show the analysis of the product mix. This chart will show the cumulative effect of the product mix on the profit of the organisation and also the overall profit - volume ratio of the business.

Illustration: 5

Senthil Company Ltd., is manufacturing three types of consumer goods. From the following statistics, analyse the results showing (a) the contribution and profit -volume ratio of each product (b) the overall ratio for the company and (c) the break even point.

PRODUCTS	NO. OF UNITS	SELLING	VARIABLE
COST	SOLD	PRICE PER	PER
UNIT		UNIT	
A	5,000	10-00	4-00
B	2,000	15 -00	9- 00
C	2,000	10-00	12-50

Fixed expenses amounted to Rs. 22,000

The results may be depicted by means of an appropriate chart.

WORKINGS:

Contributions made by the products:

A: [5,000 x (Rs. 10- 4)] 30,000

B: [2,000 x (Rs. 15-9)] 12,000
C: [2,000 x (Rs. 10- 12.50)] 5,000
Total contribution 37,000

Overall P.V. Ratio $= \frac{C}{S} \times 100 = \frac{37,000}{1,00,000} \times 100 = 37\%$

Companies break -even point = $\frac{F}{P / V \text{ ratio}}$

$= \frac{22,000}{37\%} = \frac{22,000}{37} \times 100$

= Rs. 59,460.

Individual ratios = $\frac{S - V}{S} \times 100$

A $= \frac{30,000}{50,000} \times 100 = 60\%$

B $= \frac{12,000}{30,000} \times 100 = 40\%$

C $= \frac{- 5,000}{20,000} \times 100 = 25\%$

Illustration: 6

Jimmy Company Ltd., shows following results on the records of the two years 2002 & 2003.

	SALE PROCEED	NET PROFIT
	Rs.	Rs.
For the year 2002	30,000	1,500
For the year 2003	27,000	600

You are required to ascertain the following information.

Fixed costs

Profit volume ratio

Break even Point

Margin of Safety at a Profit of Rs. 2,400

Sales required to 'earn' a Profit of Rs. 4,500

	SALES	NET PROFIT	TOTAL
COST			
	Rs.	Rs.	Rs.
2002	30,000	1,500	28,500
2003	27,000	600	26,400
Difference	3,000	900	2,100

For a change of Rs. 3,000 in sales, there is a corresponding change in the costs to the extent of Rs. 2,100. Only variable cost will change with production, therefore, the increase in the costs by Rs. 2,100 represents variable costs for the sales of 3,000 hence, the proportion of variable cost is $\frac{2,100}{3,000} \times 100 = 70\%$

From this, fixed costs can be calculated as follows:

	TOTAL COST	VARIABLE COST	
FIXED COST		(70% of Sales)	
	Rs.	Rs.	Rs.
(Sales Rs. 30,000)	28,500	21,000	
	7,500		
(Sales Rs. 27,000)	26,400	18,900	7,500

1) Fixed costs are Rs. 7,500

$$2) \text{ Profit Volume Ratio} = \frac{S - V}{S} \times 100$$

$$= \frac{30,000 - 21,000}{30,000} \times 100$$

$$= 30\%$$

$$3) \text{ Break even point} = \frac{F}{P/V \text{ ratio}} = \frac{7,500}{30\%} = \frac{7,500}{30} \times 100$$

B.E.P = Rs. 25,000

4) Margin of safety at a profit of Rs. 2,400

$$\text{Margin of safety} = \frac{\text{Profit}}{P/V \text{ ratio}} = \frac{2,400}{30\%}$$

$$= \frac{2,400}{30} \times 100 = 8,000$$

M/s (at a Profit of Rs.2,400) = Rs.8,000

5) Sales required to earn a profit of Rs. 4,500

$$\text{Sales required} = \frac{F + P}{P/V \text{ ratio}} = \frac{7,500 + 4,500}{30\%}$$

$$= \frac{12,000}{30} \times 100 = 40,000$$

Sales required = Rs. 40,000.

Illustration: 7

A Company produces a uniform product. The relevant data are given below:

Selling Price per unit Rs. 20

Variable cost per unit Rs. 12

Fixed overheads for the budgeted period Rs. 20,000

The company has a profit target of Rs. 30,000 for the budgeted period 2000 —2001. You are required to calculate the sales value, which the company must effect in order to earn the desired amount of profit after providing for tax at the rate of 50%.

Answer:

$$\text{P.V. ratio of the product} = \frac{C}{S} \times 100$$

$$\frac{8}{20} \times 100 = 40\%$$

Profit desired = Rs. 30,000

Profit to be earned before tax = Rs. 30,000 x 2 = 60,000

Sales required to earn this profit = Rs.2,00,000

	Rs.
Sales	2, 00, 000
Variable costs	1, 20, 000
Contribution	80,000 (40%)
Fixed overheads	20,000
Profit before tax	60,000
Less tax @ 50%	30,000
Profit after tax	30,000

Alternative Method:

To calculate the sales value to effect the desired amount of profit after providing for tax, we can apply a straight formula which is a refinement over the usual one. The formula is:

$$\text{Sales required} = \frac{F + \frac{\text{Profit}}{1 - \% \text{ of tax}}}{P/V \text{ ratio}}$$

The above illustration can be worked out in the following manner using this formula:

$$\begin{aligned} \text{Sales} &= \frac{F + \frac{\text{Profit}}{1 - \text{tax rate}}}{P/V \text{ ratio}} \\ &= \frac{20,000 + \frac{30,000}{1 - \frac{50}{100}}}{40\%} \end{aligned}$$

$$= \frac{20,000 + \frac{30,000}{1/2}}{40\%}$$

$$= \frac{20,000 + 60,000}{40\%}$$

$$= 80,000 \times \frac{100}{40} = \text{Rs. } 2,00,000$$

Illustration : 8

A manufacturing company shows the trading results of records as follows :

	SALES	NET PROFIT
	Rs.	Rs.
I Year	24,000	3,000
II Year	32,000	1,000

(a) P/v ratio

(b) Fixed cost

(c) Break- even point (sales value)

(d) Margin of Safety at a profit of Rs. 3,500

Workings:

	SALES	NET PROFIT	TOTAL
COST			
II Year	32,000	3,000	
	29,000		
I Year	24,000	1,000	23,000
Increase.	8,000	2,000	

Profit is realised only after meeting the fixed costs fully. Therefore, any variation in the profit will be caused only by a variation in contribution. Here, the ' increase in Net Profit can be taken as the increase in contribution.

For an increase of Rs. 8,000 in sale, the contribution is increased by Rs. 2,000.

$$(1) \text{ P.V. ratio (contribution ratio) } = \frac{2,000}{8,000} \times 100 = 25\%$$

When P.V. ratio is 25% variable cost ratio will be 75%

$$\text{At a sale of Rs. 32,000, Variable cost} = \frac{32,000}{100} = \text{Rs. 24,000}$$

$$\text{Fixed costs} = \frac{\text{Fixed cost}}{\text{P.V. ratio}} \text{ Total cost - Variable cost}$$

$$(2) \text{ Fixed cost} = 29,000 - 24,000 = \text{Rs. 5,000}$$

$$(3) \text{ Break-even sales} = \frac{\text{Fixed cost}}{\text{P.V. ratio}}$$

$$= \frac{5,000}{25} \times 100 = \text{Rs. 20,000}$$

$$\text{BEP sales value} = \text{Rs. 20,000}$$

$$(4) \text{ Margin of Safety (M/S)} = \frac{\text{Profit}}{\text{P.V. ratio}}$$

(Profit required is Rs. 3,500)

$$\text{M/S at a profit of Rs. 3,500} = \frac{3,500}{25} \times 100$$

$$\text{Margin of Safety} = \text{Rs. 14,000}$$

Illustration: 9

You are given the following information about two competing companies during the year 2003.

	COMPANY A	COMPANY B
	Rs.	Rs.
Sales	5,00,000	5,00,000
Variable Expenses	3,50,000	3,00,000
Fixed Expenses	1,20,000	1, 70,000

A friend of yours seeks your advice as to which company's shares he should purchase. Assuming that the capital invested is equal for the two companies, state the advice that you will give.

Workings:

The prospects of shareholders in these two companies must be compared in terms of P.V. ratio. Fixed costs, BEP sales and Margin of Safety

as at present. The company which commands more merits than the other must be chosen for investment.

$$1. \text{ P.V. ratio} = \frac{\text{contribution}}{\text{Sales}} \times 100$$

$$\text{For company A} = \frac{1,50,000}{5,00,000} \times 100 = 30\%$$

$$\text{For company B} = \frac{2,00,000}{5,00,000} \times 100 = 40\%$$

$$2. \text{ BEP sales value} = \frac{\text{Fixed cost}}{\text{P.V. ratio}}$$

$$\text{For company A} = \frac{1,20,00}{30} \times 100 = \text{Rs. } 4,00,000$$

$$\text{For company B} = \frac{1,70,000}{40} \times 100 = \text{Rs. } 4,25,000$$

3. Profit when sales amount to Rs. 5,00,000

	Sales	-	Total cost	=	Profit
For company A	=		5,00,000 - 4,70,000	=	Rs. 30,000
For company B	=		5,00,000 - 4,70,000	=	Rs. 30,000

4. Margin of Safety at a profit of Rs. 30,000 (as at present)

$$\text{M/S} = \frac{\text{Profit}}{\text{P.V. ratio}} \quad (\text{or Actual sales - BEP sales})$$

$$\text{For Company A} = \frac{30,000}{30} \times 100 = \text{Rs. } 1,00,000.$$

$$\text{For Company B} = \frac{30,000}{40} \times 100 = \text{Rs. } 75,000$$

TABLE OF COMPARISON :

Marginal Costing

NOTES

	COMPANY A	COMPANY B
1. P.V. ratio	30%	40%
2. BEP sales value	Rs. 4,00,000	Rs. 4,25,000
3. Profit presently available	Rs. 30,000	Rs. 30,000
4. Margin of safety	Rs. 1,00,000	Rs. 75,000
5. Fixed costs	Rs. 1,20,000	Rs. 1,70,000

From this table we ascertain that though the P.V. ratio is higher in the case of company 'B', all other factors -namely BEP sales, Margin of safety and the incidence of fixed costs are in favour of company 'A'. (Despite higher P.V. Ratio Company B has to go a long way to reach the BEP and also to suffer from a narrow margin of safety. This is solely because of a huge amount of fixed expenses)

Company 'A' is preferable.

Illustration: 10

A company reported its operating results for 2002 and 2003 as follows :

	2002	2003
	Rs.	Rs.
Sales	10,00,000	12,60,000
Less : Cost of sales	8,00,000	9,40,000
Gross profit	2,00,000	3,20,000
Less : Overhead	2,25,000	2,45,000
Net profit	(-) 25,000	75,000

During 2003 selling prices were raised by 5%. Analyse the causes of increase in profits in 2003.

Solution :

STATEMENT SHOWING RECONCILIATION OF PROFIT EARNED IN 2002 WITH THAT EARNED IN 2003

	Rs.	Rs.
Profit earned during 2002 (Less)		-25,000
Add: Increase in Profit in 2003 due to		
1) Increase in Sales Price	60,000	
2) Increase in Sales Volume	40,000	

3) Savings in Cost of Sales	20,000	1,20,000
		95,000
Less: Decrease in Profit in 2003 due to		
1) Increase in Fixed overhead	20,000	20,000
Net Profit earned during 2003		75,000

WORKINGS:

Sales for 2003 are Rs. 12, 60,000

Sales for 2002 are Rs. 10, 00,000

1. Increase in profit due to
$$= \frac{12,60,000}{105} \times 5 = 60,000$$

2. Sales for 2003 before increasing the

Sales Price (12,60,000 -60,000) = Rs. 12,00,000

Increase in Volume of Sales = Rs. 2, 00,000

(12, 00,000 -10, 00,000)

Increase in Profit due to

Increase in volume of sales
$$= \frac{2,00,000}{1,00,000} \times 2,00,000 = \text{Rs. } 40,000$$

3. Cost of sales incurred in 2003 of 2002 prices = Rs. 9, 40,000

Cost of sales to be incurred on 2002 basis = Rs. 9, 60,000

Savings in cost of sales resulting in increase profit in 2003 = 20,000

4. Fixed Overhead in 2003 Rs. 2, 45,000

Fixed Overhead in 2002 Rs. 2, 25,000

Excess resulting in decrease of Profit in 2002 Rs. 20,000

4.7 KEY TERMS

- **Marginal Cost :** An additional cost to the total cost arising out a the production a one more unit.
- **Contribution :** Excess a sales over variable cost.
- **Break even point:** Point a sales at which total sales in equivalent to its total cost. i.e. no profit or no loss.
- **Margin of safety:** Excess A sales over Break Even sales.
- **Fixed cost:** Cost which do not vary on the change in the production

4.8 SUMMARY

Marginal costing is a tool of management accounting in making decisions regarding cost and profit. This chapter would have given enough knowledge on the concept of marginal costing as well as its application on various situations. Students have to understand that the decisions will be different if marginal costing is not applied.

All the decisions are taken at the stage of 'contribution' instead of 'Net profit' profit – volume – analysis is also dealt with various alternatives.

4.9 ANSWER TO CHECK YOUR PROGRESS

- | | | | |
|----|-------------|------------------|-----------------|
| 1. | a) True | b) False | c) False |
| | d) True | e) True. | |
| 2. | a) Variable | b) Decisions | c) |
| | Variable | d) Contribution. | e) Contribution |

4.10 QUESTIONS / EXERCISES

1. Explain clearly what do you understand by the technique of marginal costing and how it differs from the conventional system of absorption costing?
2. Explain with illustrations the meaning and significance of "contribution" in marginal costing. Give the marginal cost equation.
3. Enumerate with simple illustrations the uses of marginal costing technique in industrial concerns.
4. "Marginal costs reveal the lowest price at which a product can be sold during a trade depression and they also reveal to management the most profitable lines during a period of intense trade activity"- discuss.
5. Explain clearly the principles, of Marginal Costing. It is stated that 'Sales at a price less than the total cost sometimes fetch benefit to a business house. Is this statement true? if so, in what circumstances?

6. ABC Company Ltd., is manufacturing a consumer product. The necessary

data regarding costs and revenue are given below.

	Rs.
Sales (50,000 units @ Rs. 10 each)	5, 00,000
Variable costs	2, 00,00.0
Fixed costs	1, 00,000

After calculating the (P/V) ratio and break -even sales, evaluate the effect , of the following scheme on profit.

- (a) 20% increase in sales due to 15% decrease in selling price or
- (b) 15% decrease in sales due to 20% increase in selling price

7. Write short notes on:

- (a) Break - even chart
- (b) Profit - volume graph
- (c) Profitability Index
- (d) Angle of incidence
- (e) Margin of Safety
- (f) P/V Ratio

4.11 FURTHER READING

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